STIC Search Report
EIC 1700

STIC Database Tracking Number: 210833

TO: Monique Wills **Location: Remsen 6c21** **Art Unit : 1745** **December 19, 2006** **Phone: 571-272-1309** **Serial Number: 10 / 913922**	**From: Jan Delaval** **Location: EIC 1700** **Remsen 4a30** **Phone: 571-272-2504** **jan.delaval@uspto.gov**

Search Notes

9/14/03

10/529,391

11/322,760

```
=> d his

     (FILE 'HOME' ENTERED AT 12:26:45 ON 19 DEC 2006)
               SET COST OFF

     FILE 'HCAPLUS' ENTERED AT 12:28:35 ON 19 DEC 2006
L1             2 S (US20050058903 OR US20050058902)/PN OR (US2004-913922# OR WO2
               E EYLEM/AU
L2            36 S E4,E5
               E CAHIT/AU
               E WANG/AU
L3            13 S E3
               E WANG X/AU
L4          1825 S E3,E9
               E WANG XIAN/AU
L5           220 S E3
L6             2 S E14
               E WANG XIANDONG/AU
L7            26 S E3
               E WANG NAME/AU
L8            72 S E4
               E XIAN/AU
               E XIAN D/AU
L9             6 S E3,E10
               E XIAN NAME/AU
               E XIANDONG/AU
               E CHRISTIAN/AU
L10           12 S E3
               E CHRISTIAN P/AU
L11           33 S E3,E4
L12           74 S E15-E17
               E KOMM/AU
L13            2 S E3
L14            9 S E20,E23
               SEL RN L1

     FILE 'REGISTRY' ENTERED AT 12:32:29 ON 19 DEC 2006
L15           92 S E1-E92
L16           22 S L15 AND BI/ELS
L17           12 S L16 AND (LI OR NA OR K OR RB OR CS)/ELS
L18            9 S L17 NOT (SR OR BA)/ELS
L19        38414 S (BI/ELS OR 7440-69-9/CRN OR ?BISMUTH?/CNS) AND (O/ELS OR 1777
L20         2424 S L19 AND (K/ELS OR 7440-09-7/CRN OR ?POTASSIUM?/CNS)
L21         1033 S L19 AND (LI/ELS OR 7439-93-2/CRN OR ?LITHIUM?/CNS)
L22         2749 S L19 AND (NA/ELS OR 7440-23-5/CRN OR ?SODIUM?/CNS)
L23          400 S L19 AND (RB/ELS OR 7440-17-7/CRN OR ?RUBIDIUM?/CNS)
L24          574 S L19 AND (CS/ELS OR 7440-46-2/CRN OR ?CESIUM?/CNS)
L25           82 S L20-L24 AND 3/ELC.SUB
L26            3 S L25 NOT TIS/CI
L27           79 S L25 NOT L26
L28          167 S L21 AND L20
L29           16 S L21 AND L23
L30            3 S L28,L29 AND 4/ELC.SUB
L31         1200 S L20 AND L21-L24
L32          322 S L21 AND L22-L24
L33          199 S L22 AND L23-L24
L34           61 S L23 AND L24
L35          303 S L31 AND L32-L34
L36           25 S L32 AND L33-L34
L37           22 S L33 AND L34
```

```
L38          21 S L35 AND L36,L37
L39           3 S L36 AND L37
L40        1432 S L31-L39
L41         170 S L40 NOT (FR OR BE OR MG OR CA O                    LA OR
L42           6 S L41 NOT (B OR AL OR GA OR IN OR                    I OR
L43          85 S L18,L27,L30,L42

     FILE 'HCAPLUS' ENTERED AT 12:48:19 ON 19 DEC
L44         404 S L43
L45           3 S L1-L14 AND L44
L46           0 S L44 AND (GILLET? OR GILET?)/PA,C
L47         283 S L44 AND PY<=2003 NOT P/DT
L48          80 S L44 AND (PD<=20030922 OR PRD<=20                   ND P
L49         363 S L47,L48
                E BATTERY/CT
L50       57940 S E4+OLD,NT OR E5+OLD,NT OR E6+OLD
                E E4+ALL
                E E27+ALL
L51       54413 S E9+OLD,NT
                E BATTERY/CT
                E E6+ALL
                E E3+ALL
L52      219662 S E3+OLD,NT
                E BATTERY/CT
                E E8+ALL
                E E4+ALL
L53       81507 S E4,E10,E12,E14,E23,E24
                E BATTERY/CT
                E E9+ALL
L54        8676 S E2+OLD,NT OR E3+OLD,NT OR E4+OLD,NT
                E BATTERIES/CT
                E E3+ALL
L55       28202 S E1
L56      118642 S E2+OLD,NT OR E3+OLD,NT OR E4+OLD,NT OR E5+OLD,NT
                E E2+ALL
                E E23+ALL
L57       23632 S E8+OLD
                E BATTERIES/CT
                E E3+ALL
                E E3+ALL
                E E7+ALL
L58       21169 S E7+OLD,NT
                E E24+ALL
L59        9219 S E5+OLD
                E E4+ALL
L60       51078 S E4+OLD,NT
                E BATTERIES/CT
                E E3+ALL
                E E5+ALL
L61       53083 S E7+OLD,NT
                E E6+ALL
L62       34841 S E3+NT
                E E2+ALL
L63         370 S E2
L64          33 S L49 AND L50-L63
L65          55 S L49 AND (?BATTER? OR ?CATHOD? OR ?ANOD? OR ?ELECTROD? OR ?ELE
L66          56 S L64,L65
L67          18 S 52/SC,SX AND L49
L68          18 S H01M/IPC,IC,ICM,ICS AND L49
L69          56 S L66-L68
```


85 hit compounds in Registry

```
L70          37 S L69 NOT BATTERY
                SEL DN AN 5 12 17 36
L71           4 S L70 AND E1-E12
L72          19 S L69 NOT L70
                SEL DN AN 11 12 17
L73          16 S L72 NOT E13-E21
L74          21 S L45,L71,L73
L75          21 S L74 AND L1-L14,L44-L74
                SEL HIT RN

     FILE 'REGISTRY' ENTERED AT 13:05:58 ON 19 DEC 2006
L76          21 S E22-E42

=> fil reg
FILE 'REGISTRY' ENTERED AT 13:06:18 ON 19 DEC 2006
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2006 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:   18 DEC 2006  HIGHEST RN 915867-78-6
DICTIONARY FILE UPDATES:  18 DEC 2006  HIGHEST RN 915867-78-6

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH June 30, 2006

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating
experimental property data in the original docum
on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

=> d ide can tot l76

L76  ANSWER 1 OF 21  REGISTRY  COPYRIGHT 2006 AC
RN   847980-22-7  REGISTRY
ED   Entered STN:  06 Apr 2005
CN   Bismuth lithium oxide (Bi3Li5O10) (9CI)  (C
MF   Bi . Li . O
AF   Bi3 Li5 O10
CI   TIS
SR   CA
LC   STN Files:   CA, CAPLUS, USPATFULL
```

Component	Ratio	Component Registry Number
O	10	17778-80-2
Bi	3	7440-69-9
Li	5	7439-93-2

```
               3 REFERENCES IN FILE CA (1907 TO DATE)
               3 REFERENCES IN FILE CAPLUS (1907 TO DATE)
```


Hit compounds from references 1-21, set L75

REFERENCE 1: 145:401019

REFERENCE 2: 142:319812

REFERENCE 3: 142:319811

L76 ANSWER 2 OF 21 REGISTRY COPYRIGHT 2006 ACS on STN
RN **615535-82-5** REGISTRY
ED Entered STN: 12 Nov 2003
CN Bismuth lithium oxide (BiLi2O4) (9CI) (CA INDEX NAME)
MF Bi . Li . O
AF Bi Li2 O4
CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
O	4	17778-80-2
Bi	1	7440-69-9
Li	2	7439-93-2

2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 139:352685

REFERENCE 2: 139:340030

L76 ANSWER 3 OF 21 REGISTRY COPYRIGHT 2006 ACS on STN
RN **203737-11-5** REGISTRY
ED Entered STN: 07 Apr 1998
CN Bismuth rubidium oxide (BiRbO3) (9CI) (CA INDEX NAME)
MF Bi . O . Rb
AF Bi O3 Rb
CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
O	3	17778-80-2
Bi	1	7440-69-9
Rb	1	7440-17-7

2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 130:40925

REFERENCE 2: 128:197302

L76 ANSWER 4 OF 21 REGISTRY COPYRIGHT 2006 ACS on STN
RN **203737-03-5** REGISTRY
ED Entered STN: 07 Apr 1998
CN Bismuth lithium oxide (Bi2Li4O7) (9CI) (CA INDEX NAME)
MF Bi . Li . O

AF Bi2 Li4 O7
CI TIS
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

Component	Ratio	Component Registry Number
O	7	17778-80-2
Bi	2	7440-69-9
Li	4	7439-93-2

4 REFERENCES IN FILE CA (1907 TO DATE)
4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 145:401019

REFERENCE 2: 142:319812

REFERENCE 3: 142:319811

REFERENCE 4: 128:197302

L76 ANSWER 5 OF 21 REGISTRY COPYRIGHT 2006 ACS on STN
RN **191538-77-9** REGISTRY
ED Entered STN: 23 Jul 1997
CN Bismuth lithium oxide (BiLiO-2O2) (9CI) (CA INDEX NAME)
MF Bi . Li . O
AF Bi LiO-2 O2
CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
O	2	17778-80-2
Bi	1	7440-69-9
Li	0 - 2	7439-93-2

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 127:68587

L76 ANSWER 6 OF 21 REGISTRY COPYRIGHT 2006 ACS on STN
RN **167994-88-9** REGISTRY
ED Entered STN: 22 Sep 1995
CN Bismuth lithium oxide (BiLi3O4) (9CI) (CA INDEX NAME)
OTHER NAMES:
CN Bismuth lithium oxide (Li3BiO4)
CN Lithium bismuthate(V) (Li3BiO4)
CN Lithium orthobismuthate(V) (Li3BiO4)
DR 12513-99-4
MF Bi . Li . O
AF Bi Li3 O4
CI TIS
SR CA
LC STN Files: CA, CAOLD, CAPLUS, TOXCENTER, USPATFULL

Component	Ratio	Component Registry Number
O	4	17778-80-2
Bi	1	7440-69-9
Li	3	7439-93-2

14 REFERENCES IN FILE CA (1907 TO DATE)
14 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 145:401019

REFERENCE 2: 142:319812

REFERENCE 3: 142:319811

REFERENCE 4: 141:126282

REFERENCE 5: 128:197302

REFERENCE 6: 124:122117

REFERENCE 7: 124:122056

REFERENCE 8: 123:318751

REFERENCE 9: 123:204334

REFERENCE 10: 113:183729

L76 ANSWER 7 OF 21 REGISTRY COPYRIGHT 2006 ACS on STN
RN **157270-14-9** REGISTRY
ED Entered STN: 26 Aug 1994
CN Bismuth lithium oxide (Bi0.6-1.4Li0.6-1.4O1.6-2.4) (9CI) (CA INDEX NAME)
MF Bi . Li . O
AF Bi0.6-1.4 Li0.6-1.4 O1.6-2.4
CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
O	1.6 - 2.4	17778-80-2
Bi	0.6 - 1.4	7440-69-9
Li	0.6 - 1.4	7439-93-2

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 121:146964

L76 ANSWER 8 OF 21 REGISTRY COPYRIGHT 2006 ACS on STN
RN **157225-53-1** REGISTRY
ED Entered STN: 24 Aug 1994
CN Bismuth lithium oxide (Bi1.18Li0.82O2.18) (9CI) (CA INDEX NAME)
MF Bi . Li . O
AF Bi1.18 Li0.82 O2.18
CI TIS
SR CA

LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
O	2.18	17778-80-2
Bi	1.18	7440-69-9
Li	0.82	7439-93-2

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 121:146964

L76 ANSWER 9 OF 21 REGISTRY COPYRIGHT 2006 ACS on STN
RN **144611-44-9** REGISTRY
ED Entered STN: 25 Nov 1992
CN Bismuth sodium oxide (Bi1.7-2Na0-0.3O2.7-3) (9CI) (CA INDEX NAME)
MF Bi . Na . O
AF Bi1.7-2 Na0-0.3 O2.7-3
CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
O	2.7 - 3	17778-80-2
Bi	1.7 - 2	7440-69-9
Na	0 - 0.3	7440-23-5

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 117:236390

L76 ANSWER 10 OF 21 REGISTRY COPYRIGHT 2006 ACS on STN
RN **144611-43-8** REGISTRY
ED Entered STN: 25 Nov 1992
CN Bismuth potassium oxide (Bi1.7-2K0-0.3O2.7-3) (9CI) (CA INDEX NAME)
MF Bi . K . O
AF Bi1.7-2 K0-0.3 O2.7-3
CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
O	2.7 - 3	17778-80-2
Bi	1.7 - 2	7440-69-9
K	0 - 0.3	7440-09-7

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 117:236390

L76 ANSWER 11 OF 21 REGISTRY COPYRIGHT 2006 ACS on STN
RN **130280-78-3** REGISTRY

ED Entered STN: 09 Nov 1990
CN Bismuth cesium oxide (9CI) (CA INDEX NAME)
MF Bi . Cs . O
CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
O	x	17778-80-2
Bi	x	7440-69-9
Cs	x	7440-46-2

4 REFERENCES IN FILE CA (1907 TO DATE)
4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 144:36003

REFERENCE 2: 133:215280

REFERENCE 3: 121:143831

REFERENCE 4: 113:203259

L76 ANSWER 12 OF 21 REGISTRY COPYRIGHT 2006 ACS on STN
RN **130280-77-2** REGISTRY
ED Entered STN: 09 Nov 1990
CN Bismuth sodium oxide (9CI) (CA INDEX NAME)
MF Bi . Na . O
CI TIS
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

Component	Ratio	Component Registry Number
O	x	17778-80-2
Bi	x	7440-69-9
Na	x	7440-23-5

7 REFERENCES IN FILE CA (1907 TO DATE)
7 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 145:401019

REFERENCE 2: 143:409260

REFERENCE 3: 123:181616

REFERENCE 4: 115:220328

REFERENCE 5: 113:203259

REFERENCE 6: 67:79030

REFERENCE 7: 66:98882

L76 ANSWER 13 OF 21 REGISTRY COPYRIGHT 2006 ACS on STN
RN **130280-71-6** REGISTRY

ED Entered STN: 09 Nov 1990
CN Bismuth lithium oxide (9CI) (CA INDEX NAME)
MF Bi . Li . O
CI TIS
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

Component	Ratio	Component Registry Number
O	x	17778-80-2
Bi	x	7440-69-9
Li	x	7439-93-2

8 REFERENCES IN FILE CA (1907 TO DATE)
8 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 144:224568

REFERENCE 2: 144:140098

REFERENCE 3: 142:319812

REFERENCE 4: 142:319811

REFERENCE 5: 141:126282

REFERENCE 6: 132:17426

REFERENCE 7: 130:159857

REFERENCE 8: 113:203259

L76 ANSWER 14 OF 21 REGISTRY COPYRIGHT 2006 ACS on STN
RN **57485-27-5** REGISTRY
ED Entered STN: 16 Nov 1984
CN Bismuth potassium oxide (9CI) (CA INDEX NAME)
MF Bi . K . O
CI TIS
LC STN Files: CA, CAPLUS, USPATFULL

Component	Ratio	Component Registry Number
O	x	17778-80-2
Bi	x	7440-69-9
K	x	7440-09-7

12 REFERENCES IN FILE CA (1907 TO DATE)
12 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 144:153383

REFERENCE 2: 143:409260

REFERENCE 3: 142:319812

REFERENCE 4: 142:319811

REFERENCE 5: 139:167704

REFERENCE 6: 131:316349

REFERENCE 7: 128:206437

REFERENCE 8: 123:186662

REFERENCE 9: 118:92658

REFERENCE 10: 113:203259

L76 ANSWER 15 OF 21 REGISTRY COPYRIGHT 2006 ACS on STN
RN **37354-73-7** REGISTRY
ED Entered STN: 16 Nov 1984
CN Bismuth sodium oxide (BiNa3O4) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Bismuthate (BiO43-), trisodium, (T-4)-
CN Sodium bismuthate(V) (Na3BiO4) (6CI, 7CI)
OTHER NAMES:
CN Sodium bismuthate (Na3BiO4)
DR 863287-88-1
MF Bi . Na . O
AF Bi Na3 O4
CI TIS
LC STN Files: CA, CAOLD, CAPLUS

Component	Ratio	Component Registry Number
O	4	17778-80-2
Bi	1	7440-69-9
Na	3	7440-23-5

8 REFERENCES IN FILE CA (1907 TO DATE)
8 REFERENCES IN FILE CAPLUS (1907 TO DATE)
2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 143:412385

REFERENCE 2: 143:257374

REFERENCE 3: 128:197302

REFERENCE 4: 84:113426

REFERENCE 5: 78:8885

REFERENCE 6: 58:44620

REFERENCE 7: 54:48345

REFERENCE 8: 35:32272

L76 ANSWER 16 OF 21 REGISTRY COPYRIGHT 2006 ACS on STN
RN **12589-75-2** REGISTRY
ED Entered STN: 16 Nov 1984
CN Bismuth potassium oxide (BiKO3) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Bismuthate (BiO31-), potassium
CN Potassium bismuthate(V) (6CI)

OTHER NAMES:
CN Potassium bismuthate (KBiO3)
MF Bi . K . O
AF Bi K O3
CI COM, TIS
LC STN Files: CA, CAOLD, CAPLUS, IFICDB, IFIUDB, RTECS*, TOXCENTER, USPATFULL
(*File contains numerically searchable property data)

Component	Ratio	Component Registry Number
O	3	17778-80-2
Bi	1	7440-69-9
K	1	7440-09-7

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

42 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
42 REFERENCES IN FILE CAPLUS (1907 TO DATE)
1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 145:401019

REFERENCE 2: 143:398472

REFERENCE 3: 143:217357

REFERENCE 4: 142:319812

REFERENCE 5: 142:319811

REFERENCE 6: 141:166625

REFERENCE 7: 138:145783

REFERENCE 8: 137:209061

REFERENCE 9: 136:62169

REFERENCE 10: 135:311737

L76 ANSWER 17 OF 21 REGISTRY COPYRIGHT 2006 ACS on STN
RN **12514-00-0** REGISTRY
ED Entered STN: 16 Nov 1984
CN Bismuth lithium oxide (BiLi5O5) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Bismuth lithium oxide (Li5BiO5) (8CI)
CN Bismuthate (BiO55-), pentalithium
CN Lithium bismuthate(V) (Li5BiO5) (7CI)
MF Bi . Li . O
AF Bi Li5 O5
CI TIS
LC STN Files: CA, CAOLD, CAPLUS, USPATFULL

Component	Ratio	Component Registry Number

O	5	17778-80-2
Bi	1	7440-69-9
Li	5	7439-93-2

8 REFERENCES IN FILE CA (1907 TO DATE)
8 REFERENCES IN FILE CAPLUS (1907 TO DATE)
1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 145:401019

REFERENCE 2: 142:319812

REFERENCE 3: 142:319811

REFERENCE 4: 141:126282

REFERENCE 5: 111:244799

REFERENCE 6: 108:160217

REFERENCE 7: 73:82218

REFERENCE 8: 58:44620

L76 ANSWER 18 OF 21 REGISTRY COPYRIGHT 2006 ACS on STN
RN **12513-98-3** REGISTRY
ED Entered STN: 16 Nov 1984
CN Bismuth lithium oxide (BiLiO3) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Bismuth lithium oxide (LiBiO3) (8CI)
CN Bismuthate (BiO31-), lithium
CN Lithium bismuthate(V) (LiBiO3) (7CI)
OTHER NAMES:
CN Lithium bismuthate
MF Bi . Li . O
AF Bi Li O3
CI TIS
LC STN Files: CA, CAOLD, CAPLUS, TOXCENTER, USPATFULL

Component	Ratio	Component Registry Number
O	3	17778-80-2
Bi	1	7440-69-9
Li	1	7439-93-2

14 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
14 REFERENCES IN FILE CAPLUS (1907 TO DATE)
1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 145:401019

REFERENCE 2: 144:153383

REFERENCE 3: 143:217357

REFERENCE 4: 142:319812

REFERENCE 5: 142:319811

REFERENCE 6: 142:205452

REFERENCE 7: 128:197302

REFERENCE 8: 125:315005

REFERENCE 9: 106:112354

REFERENCE 10: 106:112353

L76 ANSWER 19 OF 21 REGISTRY COPYRIGHT 2006 ACS on STN
RN **12421-80-6** REGISTRY
ED Entered STN: 16 Nov 1984
CN Bismuth lithium oxide (BiLi7O6) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Bismuth lithium oxide (Li7BiO6) (8CI)
CN Bismuthate (BiO67-), heptalithium, (OC-6-11)-
CN Lithium bismuthate(V) (Li7BiO6) (7CI)
OTHER NAMES:
CN Lithium bismuth oxide (Li7BiO6)
MF Bi . Li . O
AF Bi Li7 O6
CI TIS
LC STN Files: CA, CAOLD, CAPLUS, USPATFULL

Component	Ratio	Component Registry Number
O	6	17778-80-2
Bi	1	7440-69-9
Li	7	7439-93-2

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

16 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
16 REFERENCES IN FILE CAPLUS (1907 TO DATE)
2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 145:401019

REFERENCE 2: 144:204442

REFERENCE 3: 142:319812

REFERENCE 4: 141:126282

REFERENCE 5: 140:226149

REFERENCE 6: 114:34701

REFERENCE 7: 100:183892

REFERENCE 8: 100:166092

REFERENCE 9: 100:60112

REFERENCE 10: 83:123480

L76 ANSWER 20 OF 21 REGISTRY COPYRIGHT 2006 ACS on STN
RN **12232-99-4** REGISTRY
ED Entered STN: 16 Nov 1984
CN Bismuth sodium oxide (BiNaO3) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Bismuth sodium oxide (NaBiO3) (8CI)
CN Sodium bismuthate(V) (NaBiO3) (6CI, 7CI)
OTHER NAMES:
CN Bismuth sodium trioxide
CN Sodium bismuth oxide (NaBiO3)
CN Sodium bismuthate
CN Sodium bismuthate (NaBiO3)
DR 12125-43-8, 33553-45-6
MF Bi . Na . O
AF Bi Na O3
CI COM, TIS
LC STN Files: AQUIRE, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMLIST, CSCHEM, IFICDB, IFIPAT, IFIUDB, IPA, MRCK*, MSDS-OHS, PIRA, RTECS*, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

Component	Ratio	Component Registry Number
O	3	17778-80-2
Bi	1	7440-69-9
Na	1	7440-23-5

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

258 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
258 REFERENCES IN FILE CAPLUS (1907 TO DATE)
26 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 145:457325

REFERENCE 2: 145:406447

REFERENCE 3: 145:401019

REFERENCE 4: 145:302701

REFERENCE 5: 145:126967

REFERENCE 6: 144:153383

REFERENCE 7: 144:141392

REFERENCE 8: 144:135937

REFERENCE 9: 144:129120

REFERENCE 10: 143:480709

L76 ANSWER 21 OF 21 REGISTRY COPYRIGHT 2006 ACS on STN

RN **11086-13-8** REGISTRY
ED Entered STN: 16 Nov 1984
CN Bismuth lithium oxide (BiLiO2) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Bismuth lithium oxide (LiBiO2) (6CI, 8CI)
CN Bismuthate (BiO21-), lithium
MF Bi . Li . O
AF Bi Li O2
CI TIS
LC STN Files: CA, CAOLD, CAPLUS, TOXCENTER

Component	Ratio	Component Registry Number
O	2	17778-80-2
Bi	1	7440-69-9
Li	1	7439-93-2

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

23 REFERENCES IN FILE CA (1907 TO DATE)
23 REFERENCES IN FILE CAPLUS (1907 TO DATE)
1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 145:359879

REFERENCE 2: 145:303709

REFERENCE 3: 145:172239

REFERENCE 4: 144:196402

REFERENCE 5: 143:330327

REFERENCE 6: 142:30644

REFERENCE 7: 141:126282

REFERENCE 8: 141:58063

REFERENCE 9: 139:389423

REFERENCE 10: 137:220657

=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 13:06:33 ON 19 DEC 2006
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE COVERS 1907 - 19 Dec 2006 VOL 145 ISS 26
FILE LAST UPDATED: 18 Dec 2006 (20061218/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d bib abs hitind hitstr retable tot l75

L75 ANSWER 1 OF 21 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2006:1070235 HCAPLUS
DN 145:401019
TI Lithium battery containing bismuth metal oxide
IN **Christian, Paul A.**; **Eylem, Cahit**; Nanjundaswamy, Kirakodu S.; Zhang, Fan; **Wang, Xiandong**
PA USA
SO U.S. Pat. Appl. Publ., 19pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2006228629	A1	20061012	US 2005-103050	20050411
WO 2006110354	A1	20061019	WO 2006-US12155	20060330

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRAI US 2005-103050 A 20050411

Not prior Art

AB A battery includes a cathode having an oxide containing one or more metals and pentavalent bismuth, an anode including lithium, a separator between the cathode and the anode, and an electrolyte. The metal(s) can be an alkali metal, an alkaline earth metal, a transition metal, and/or a main group metal.

INCL 429231100; 429231600; 429221000; 429223000; 429220000; 429218100; 429222000; 429231500; 429224000; 429231950
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 49
IT **Battery cathodes**
(lithium battery containing bismuth metal oxide)
IT **Primary batteries**
Secondary batteries
(lithium; lithium battery containing bismuth metal oxide)
IT 1301-96-8, Silver oxide (AgO) 7439-93-2, Lithium, uses 11104-44-2, Bismuth molybdenum oxide 12026-04-9, Nickel hydroxide oxide niooh 12338-00-0, Bismuth cobalt oxide 12408-25-2, Nickel silver oxide (NiAgO2) **12421-80-6**, Bismuth lithium oxide (BiLi7O6) **12513-98-3**, Bismuth lithium oxide (BiLiO3) **12514-00-0**,

Bismuth lithium oxide (BiLi5O5) **12589-75-2**, Bismuth potassium oxide (BiKO3) 12777-45-6, Bismuth tin oxide 12785-50-1, Barium bismuth oxide (BaBiO3) 13773-23-4, Barium iron oxide (BaFeO4) 37220-39-6, Bismuth tungsten oxide 39374-57-7, Bismuth iron oxide 39407-11-9, Bismuth silver oxide (BiAgO3) 53801-77-7, Bismuth vanadium oxide 55128-72-8, Bismuth gallium oxide 60862-65-9, Bismuth lead oxide 61027-36-9, Bismuth calcium oxide 61178-66-3, Bismuth cadmium oxide 61331-88-2, Bismuth indium oxide 62010-29-1, Antimony bismuth oxide 66554-56-1, Bismuth nickel oxide 67182-14-3, Bismuth ruthenium oxide 103938-29-0, Bismuth terbium oxide 110687-32-6, Bismuth zirconium oxide 129292-43-9, Bismuth strontium oxide (Bi2SrO6) **130280-77-2**, Bismuth sodium oxide 136479-02-2, Bismuth manganese oxide 139899-77-7, Bismuth chromium oxide 140444-95-7, Bismuth lithium strontium oxide (BiLiSr3O6) 140444-96-8, Bismuth sodium strontium oxide (BiNaSr3O6) 140883-51-8, Bismuth tantalum oxide 142165-03-5, Bismuth niobium oxide 142747-83-9, Bismuth zinc oxide (Bi2ZnO6) 151532-01-3, Bismuth erbium oxide ((Bi,Er)2O3) 160936-85-6, Bismuth praseodymium oxide **167994-88-9**, Bismuth lithium oxide (BiLi3O4) 184017-21-8, Bismuth lanthanum oxide 191284-22-7, Bismuth strontium oxide (Bi2Sr2O7) 193340-54-4, Bismuth magnesium oxide (Bi2MgO6) 193631-18-4, Bismuth yttrium oxide **203737-03-5**, Bismuth lithium oxide (Bi2Li4O7) 239447-99-5, Bismuth cerium oxide 275359-72-3, Bismuth gadolinium oxide 397849-60-4, Bismuth scandium strontium oxide (BiScSr2O6) 473968-73-9, Bismuth dysprosium oxide 473968-74-0, Bismuth ytterbium oxide **847980-22-7**, Bismuth lithium oxide (Bi3Li5O10) 847980-24-9, Bismuth copper oxide (Bi2Cu2O7) 847980-25-0, Bismuth cadmium oxide (Bi2CdO6) 851475-13-3, Arsenic bismuth oxide 911695-34-6, Barium bismuth lithium oxide (Ba2Bi2Li2O11) 911695-35-7, Bismuth palladium oxide 911695-36-8, Bismuth hafnium oxide 911695-37-9, Bismuth neodymium oxide 911695-38-0, Bismuth samarium oxide 911695-39-1, Bismuth europium oxide 911695-40-4, Bismuth holmium oxide 911695-41-5, Bismuth thulium oxide 911695-42-6, Bismuth thallium oxide
RL: DEV (Device component use); USES (Uses)
(lithium battery containing bismuth metal oxide)

IT **12232-99-4P**, Bismuth sodium oxide (BiNaO3) 14059-33-7P, Bismuth vanadium oxide (BiVO4) 35984-07-7P, Bismuth oxide (Bi2O5)
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(lithium battery containing bismuth metal oxide)

IT **12421-80-6**, Bismuth lithium oxide (BiLi7O6) **12513-98-3**, Bismuth lithium oxide (BiLiO3) **12514-00-0**, Bismuth lithium oxide (BiLi5O5) **12589-75-2**, Bismuth potassium oxide (BiKO3) **130280-77-2**, Bismuth sodium oxide **167994-88-9**, Bismuth lithium oxide (BiLi3O4) **203737-03-5**, Bismuth lithium oxide (Bi2Li4O7) **847980-22-7**, Bismuth lithium oxide (Bi3Li5O10)
RL: DEV (Device component use); USES (Uses)
(lithium battery containing bismuth metal oxide)

RN 12421-80-6 HCAPLUS
CN Bismuth lithium oxide (BiLi7O6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	6	17778-80-2
Bi	1	7440-69-9
Li	7	7439-93-2

RN 12513-98-3 HCAPLUS
CN Bismuth lithium oxide (BiLiO3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3	17778-80-2
Bi	1	7440-69-9
Li	1	7439-93-2

RN 12514-00-0 HCAPLUS
CN Bismuth lithium oxide (BiLi5O5) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	5	17778-80-2
Bi	1	7440-69-9
Li	5	7439-93-2

RN 12589-75-2 HCAPLUS
CN Bismuth potassium oxide (BiKO3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3	17778-80-2
Bi	1	7440-69-9
K	1	7440-09-7

RN 130280-77-2 HCAPLUS
CN Bismuth sodium oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Bi	x	7440-69-9
Na	x	7440-23-5

RN 167994-88-9 HCAPLUS
CN Bismuth lithium oxide (BiLi3O4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	4	17778-80-2
Bi	1	7440-69-9
Li	3	7439-93-2

RN 203737-03-5 HCAPLUS
CN Bismuth lithium oxide (Bi2Li4O7) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	7	17778-80-2
Bi	2	7440-69-9
Li	4	7439-93-2

RN 847980-22-7 HCAPLUS
CN Bismuth lithium oxide (Bi3Li5O10) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	10	17778-80-2
Bi	3	7440-69-9
Li	5	7439-93-2

IT **12232-99-4P**, Bismuth sodium oxide (BiNaO3)
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(lithium battery containing bismuth metal oxide)
RN 12232-99-4 HCAPLUS
CN Bismuth sodium oxide (BiNaO3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3	17778-80-2
Bi	1	7440-69-9
Na	1	7440-23-5

L75 ANSWER 2 OF 21 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:238506 HCAPLUS
DN 142:319812
TI Primary alkaline **battery** containing bismuth metal oxide
IN **Eylem, Cahit; Wang, Xiandong; Christian, Paul A.; Komm, Rita**
PA USA
SO U.S. Pat. Appl. Publ., 35 pp., Cont.-in-part of U.S. Ser. No. 716,358.
CODEN: USXXCO
DT **Patent**
LA English
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2005058903	A1	20050317	US 2004-913922	20040806 <--
US 2005058902	A1	20050317	US 2003-716358	20031117 <--
WO 2006017454	A2	20060216	WO 2005-US27300	20050729 <--

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRAI US 2003-503667P	P	20030916	<--
US 2003-716358	A2	20031117	<--
US 2004-913922	A	20040806	<--

AB A **battery** includes a **cathode** having an oxide containing one or more metals and pentavalent bismuth, an **anode**, a separator between the **cathode** and the **anode**, and an alkaline **electrolyte**. The metal(s) can be an alkali metal, an alkaline earth metal, a transition metal, and/or a main group metal. The separator can be ion-selective or capable of substantially preventing soluble bismuth

NPA

ionic species from diffusing from the **cathode** to the **anode**.

IC ICM **H01M0004-36**
ICS **H01M0004-48**; **H01M0004-58**; **H01M0004-44**; **H01M0004-56**; **H01M0004-57**; **H01M0004-42**

INCL 429220000; 429228000; 429230000; 429231900; 429231950; 429231600; 429222000

CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)

ST **battery** primary **cathode** additive bismuth oxide

IT **Primary batteries**
(button-type; primary alkaline **battery** containing bismuth metal oxide)

IT Carbon black, uses
Oxides (inorganic), uses
RL: TEM (Technical or engineered material use); USES (Uses)
(coatings; primary alkaline **battery** containing bismuth metal oxide)

IT Coating materials
(elec. conductive; primary alkaline **battery** containing bismuth metal oxide)

IT Membranes, nonbiological
(microporous; primary alkaline **battery** containing bismuth metal oxide)

IT **Battery cathodes**
Battery electrolytes
Cellophane
Primary batteries
Primary battery separators
(primary alkaline **battery** containing bismuth metal oxide)

IT Alkali metals, uses
Alkaline earth metals
Rare earth metals, uses
Transition metals, uses
RL: MOA (Modifier or additive use); USES (Uses)
(primary alkaline **battery** containing bismuth metal oxide)

IT 1312-43-2, Indium oxide 7440-44-0, Carbon, uses 7782-42-5, Graphite, uses 11104-61-3, Cobalt oxide 12016-80-7, Cobalt hydroxide oxide coooh 20667-12-3, Silver oxide 61701-27-7, Cobalt hydroxide oxide 100438-90-2, Nickel silver oxide
RL: TEM (Technical or engineered material use); USES (Uses)
(coatings; primary alkaline **battery** containing bismuth metal oxide)

IT 1310-58-3, POtassium hydroxide, uses 1310-65-2, Lithium hydroxide 1310-73-2, Sodium hydroxide, uses 7429-91-6, Dysprosium, uses 7439-89-6, Iron, uses 7439-91-0, Lanthanum, uses 7439-92-1, Lead, uses 7439-96-5, Manganese, uses 7439-98-7, Molybdenum, uses 7440-00-8, Neodymium, uses 7440-02-0, Nickel, uses 7440-03-1, Niobium, uses 7440-05-3, Palladium, uses 7440-10-0, Praseodymium, uses 7440-18-8, Ruthenium, uses 7440-19-9, Samarium, uses 7440-20-2, Scandium, uses 7440-25-7, Tantalum, uses 7440-27-9, Terbium, uses 7440-30-4, Thulium, uses 7440-31-5, Tin, uses 7440-33-7, Tungsten, uses 7440-36-0, Antimony, uses 7440-43-9, Cadmium, uses 7440-45-1, Cerium, uses 7440-48-4, Cobalt, uses 7440-50-8, Copper, uses 7440-52-0, Erbium, uses 7440-53-1, Europium, uses 7440-54-2, Gadolinium, uses 7440-60-0, Holmium, uses 7440-62-2, Vanadium, uses 7440-64-4, Ytterbium, uses 7440-65-5, Yttrium, uses 7440-66-6, Zinc, uses 7440-67-7, Zirconium, uses 7440-74-6, Indium, uses
RL: DEV (Device component use); USES (Uses)
(primary alkaline **battery** containing bismuth metal oxide)

IT 1304-28-5, Barium oxide, uses 1305-62-0, Calcium hydroxide, uses 1305-78-8, Calcium oxide, uses 1314-11-0, Strontium oxide, uses

1314-13-2, Zinc oxide, uses 1344-28-1, Aluminum oxide, uses 7439-95-4, Magnesium, uses 7440-24-6, Strontium, uses 7440-39-3, Barium, uses 7440-70-2, Calcium, uses 7727-43-7, Barium sulfate 7783-40-6, Magnesium fluoride 7783-48-4, Strontium fluoride 7787-32-8, Barium fluoride 7789-23-3, Potassium fluoride 7789-75-5, Calcium fluoride, uses **12421-80-6**, Bismuth lithium oxide (BiLi7O6) **12513-98-3**, Bismuth lithium oxide (BiLiO3) **12514-00-0**, Bismuth lithium oxide (BiLi5O5) **12589-75-2**, Bismuth potassium oxide (BiKO3) 12687-94-4, Praseodymium hydroxide 12785-50-1, Barium bismuth oxide (BaBiO3) 17194-00-2, Barium hydroxide 18480-07-4, Strontium hydroxide 21645-51-2, Aluminum hydroxide, uses 37382-23-3, Cerium hydroxide 39377-51-0, Europium hydroxide 39377-54-3, Lanthanum hydroxide 39407-11-9, Bismuth silver oxide (BiAgO3) 39467-06-6, Neodymium hydroxide **57485-27-5**, Bismuth potassium oxide 116900-31-3, Bismuth copper oxide 129292-43-9, Bismuth strontium oxide (Bi2SrO6) **130280-71-6**, Bismuth lithium oxide 140444-93-5, Barium bismuth lithium oxide (Ba5Bi2Li2O11) 140444-95-7, Bismuth lithium strontium oxide (BiLiSr3O6) 140444-96-8, Bismuth sodium strontium oxide (BiNaSr3O6) 142747-83-9, Bismuth zinc oxide (Bi2ZnO6) **167994-88-9**, Bismuth lithium oxide (BiLi3O4) 191284-22-7, Bismuth strontium oxide (Bi2Sr2O7) 193340-54-4, Bismuth magnesium oxide (Bi2MgO6) **203737-03-5**, Bismuth lithium oxide (Bi2Li4O7) 397849-60-4, Bismuth scandium strontium oxide (BiScSr2O6) **847980-22-7**, Bismuth lithium oxide (Bi3Li5O10) 847980-24-9, Bismuth copper oxide (Bi2Cu2O7) 847980-25-0, Bismuth cadmium oxide (Bi2CdO6)
RL: MOA (Modifier or additive use); USES (Uses)
(primary alkaline **battery** containing bismuth metal oxide)

IT 55070-72-9, Nickel hydroxide oxide
RL: TEM (Technical or engineered material use); USES (Uses)
(primary alkaline **battery** containing bismuth metal oxide)

IT **12421-80-6**, Bismuth lithium oxide (BiLi7O6) **12513-98-3**, Bismuth lithium oxide (BiLiO3) **12514-00-0**, Bismuth lithium oxide (BiLi5O5) **12589-75-2**, Bismuth potassium oxide (BiKO3) **57485-27-5**, Bismuth potassium oxide **130280-71-6**, Bismuth lithium oxide **167994-88-9**, Bismuth lithium oxide (BiLi3O4) **203737-03-5**, Bismuth lithium oxide (Bi2Li4O7) **847980-22-7**, Bismuth lithium oxide (Bi3Li5O10)
RL: MOA (Modifier or additive use); USES (Uses)
(primary alkaline **battery** containing bismuth metal oxide)

RN 12421-80-6 HCAPLUS
CN Bismuth lithium oxide (BiLi7O6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	6	17778-80-2
Bi	1	7440-69-9
Li	7	7439-93-2

RN 12513-98-3 HCAPLUS
CN Bismuth lithium oxide (BiLiO3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3	17778-80-2
Bi	1	7440-69-9
Li	1	7439-93-2

RN 12514-00-0 HCAPLUS
CN Bismuth lithium oxide (BiLi5O5) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	5	17778-80-2
Bi	1	7440-69-9
Li	5	7439-93-2

RN 12589-75-2 HCAPLUS
CN Bismuth potassium oxide (BiKO3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3	17778-80-2
Bi	1	7440-69-9
K	1	7440-09-7

RN 57485-27-5 HCAPLUS
CN Bismuth potassium oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Bi	x	7440-69-9
K	x	7440-09-7

RN 130280-71-6 HCAPLUS
CN Bismuth lithium oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Bi	x	7440-69-9
Li	x	7439-93-2

RN 167994-88-9 HCAPLUS
CN Bismuth lithium oxide (BiLi3O4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	4	17778-80-2
Bi	1	7440-69-9
Li	3	7439-93-2

RN 203737-03-5 HCAPLUS
CN Bismuth lithium oxide (Bi2Li4O7) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	7	17778-80-2
Bi	2	7440-69-9
Li	4	7439-93-2

RN 847980-22-7 HCAPLUS
CN Bismuth lithium oxide (Bi3Li5O10) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	10	17778-80-2
Bi	3	7440-69-9
Li	5	7439-93-2

L75 ANSWER 3 OF 21 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:238505 HCAPLUS
DN 142:319811
TI Primary alkaline **battery** containing bismuth metal oxide
IN **Wang, Xiandong; Christian, Paul A.**
PA USA
SO U.S. Pat. Appl. Publ., 27 pp.
CODEN: USXXCO
DT **Patent**
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2005058902	A1	20050317	US 2003-716358	20031117 <--
	US 2005058903	A1	20050317	US 2004-913922	20040806 <--
	WO 2005034267	A2	20050414	WO 2004-US29106	20040908 <--
	WO 2005034267	A3	20060209		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, US				
	RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	EP 1668724	A2	20060614	EP 2004-783383	20040908 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
	BR 2004014421	A	20061114	BR 2004-14421	20040908 <--
	CN 1868081	A	20061122	CN 2004-80029832	20040908 <--
PRAI	US 2003-503667P	P	20030916 <--		
	US 2003-716358	A2	20031117 <--		
	WO 2004-US29106	W	20040908 <--		

AB A primary **battery** includes a **cathode** having an oxide containing one or more metal and pentavalent bismuth, an **anode**, a separator between the **cathode** and the **anode**, and an alkaline **electrolyte**. The metal(s) can be an alkali metal, an alkaline earth metal, a transition metal, and/or a main group metal. The separator can be ion-selective or capable of substantially preventing soluble bismuth ionic species from diffusing from the **cathode** to the **anode**.
IC ICM **H01M0004-36**
ICS **H01M0004-48; H01M0004-42; H01M0004-58; H01M0004-00**
INCL 429220000; 429231900; 429231950; 429231600; 429229000; 429231000
CC **52-2** (Electrochemical, Radiational, and Thermal Energy

Technology)
Section cross-reference(s): 49
ST **battery cathode** additive bismuth metal oxide
IT **Primary batteries**
(alkaline; primary alkaline **battery** containing bismuth metal oxide)
IT Carbon black, uses
Oxides (inorganic), uses
RL: TEM (Technical or engineered material use); USES (Uses)
(coating; primary alkaline **battery** containing bismuth metal oxide)
IT Coating materials
(elec. conductive; primary alkaline **battery** containing bismuth metal oxide)
IT **Battery cathodes**
Primary battery separators
(primary alkaline **battery** containing bismuth metal oxide)
IT 1312-43-2, Indium oxide 7440-44-0, Carbon, uses 7782-42-5, Graphite, uses 11104-61-3, Cobalt oxide 12016-80-7, Cobalt hydroxide oxide coooh 20667-12-3, Silver oxide 55070-72-9, Nickel hydroxide oxide 61701-27-7, Cobalt hydroxide oxide 100438-90-2, Nickel silver oxide
RL: TEM (Technical or engineered material use); USES (Uses)
(coating; primary alkaline **battery** containing bismuth metal oxide)
IT 1310-58-3, Potassium hydroxide, uses 1310-65-2, Lithium hydroxide 1310-73-2, Sodium hydroxide, uses 7429-91-6D, Dysprosium, pentavalent bismuth oxide 7439-89-6D, Iron, pentavalent bismuth oxide 7439-91-0D, Lanthanum, pentavalent bismuth oxide 7439-92-1D, Lead, pentavalent bismuth oxide 7439-96-5D, Manganese, pentavalent bismuth oxide 7439-98-7D, Molybdenum, pentavalent bismuth oxide 7440-00-8D, Neodymium, pentavalent bismuth oxide 7440-02-0D, Nickel, pentavalent bismuth oxide 7440-03-1D, Niobium, pentavalent bismuth oxide 7440-05-3D, Palladium, pentavalent bismuth oxide 7440-10-0D, Praseodymium, pentavalent bismuth oxide 7440-18-8D, Ruthenium, pentavalent bismuth oxide 7440-19-9D, Samarium, pentavalent bismuth oxide 7440-20-2D, Scandium, pentavalent bismuth oxide 7440-25-7D, Tantalum, pentavalent bismuth oxide 7440-27-9D, Terbium, pentavalent bismuth oxide 7440-30-4D, Thulium, pentavalent bismuth oxide 7440-31-5D, Tin, pentavalent bismuth oxide 7440-33-7D, Tungsten, pentavalent bismuth oxide 7440-36-0D, Antimony, pentavalent bismuth oxide 7440-43-9D, Cadmium, pentavalent bismuth oxide 7440-45-1D, Cerium, pentavalent bismuth oxide 7440-48-4D, Cobalt, pentavalent bismuth oxide 7440-50-8D, Copper, pentavalent bismuth oxide 7440-52-0D, Erbium, pentavalent bismuth oxide 7440-53-1D, Europium, pentavalent bismuth oxide 7440-54-2D, Gadolinium, pentavalent bismuth oxide 7440-60-0D, Holmium, pentavalent bismuth oxide 7440-62-2D, Vanadium, pentavalent bismuth oxide 7440-64-4D, Ytterbium, pentavalent bismuth oxide 7440-65-5D, Yttrium, pentavalent bismuth oxide 7440-66-6, Zinc, uses 7440-66-6D, Zinc, pentavalent bismuth oxide 7440-67-7D, Zirconium, pentavalent bismuth oxide 7440-74-6D, Indium, pentavalent bismuth oxide **12513-98-3**, Bismuth lithium oxide (BiLiO3) **12514-00-0**, Bismuth lithium oxide (BiLi5O5) **12589-75-2**, Bismuth potassium oxide (BiKO3) 12785-50-1, Barium bismuth oxide (BaBiO3) **57485-27-5**, Bismuth potassium oxide **130280-71-6**, Bismuth lithium oxide 142747-83-9, Bismuth zinc oxide (Bi2ZnO6) **167994-88-9**, Bismuth lithium oxide (BiLi3O4) 191284-22-7, Bismuth strontium oxide (Bi2Sr2O7) 193340-54-4, Bismuth magnesium oxide (Bi2MgO6) **203737-03-5**, Bismuth lithium oxide (Bi2Li4O7) 397849-60-4, Bismuth scandium strontium oxide (BiScSr2O6) **847980-22-7**, Bismuth lithium oxide (Bi3Li5O10) 847980-24-9, Bismuth copper oxide (Bi2Cu2O7) 847980-25-0, Bismuth cadmium oxide (Bi2CdO6)
RL: DEV (Device component use); USES (Uses)
(primary alkaline **battery** containing bismuth metal oxide)

IT 39407-11-9P, Bismuth silver oxide (BiAgO3)
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(primary alkaline **battery** containing bismuth metal oxide)
IT **12513-98-3**, Bismuth lithium oxide (BiLiO3) **12514-00-0**, Bismuth lithium oxide (BiLi5O5) **12589-75-2**, Bismuth potassium oxide (BiKO3) **57485-27-5**, Bismuth potassium oxide **130280-71-6**, Bismuth lithium oxide **167994-88-9**, Bismuth lithium oxide (BiLi3O4) **203737-03-5**, Bismuth lithium oxide (Bi2Li4O7) **847980-22-7**, Bismuth lithium oxide (Bi3Li5O10)
RL: DEV (Device component use); USES (Uses)
(primary alkaline **battery** containing bismuth metal oxide)
RN 12513-98-3 HCAPLUS
CN Bismuth lithium oxide (BiLiO3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3	17778-80-2
Bi	1	7440-69-9
Li	1	7439-93-2

RN 12514-00-0 HCAPLUS
CN Bismuth lithium oxide (BiLi5O5) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	5	17778-80-2
Bi	1	7440-69-9
Li	5	7439-93-2

RN 12589-75-2 HCAPLUS
CN Bismuth potassium oxide (BiKO3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3	17778-80-2
Bi	1	7440-69-9
K	1	7440-09-7

RN 57485-27-5 HCAPLUS
CN Bismuth potassium oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Bi	x	7440-69-9
K	x	7440-09-7

RN 130280-71-6 HCAPLUS
CN Bismuth lithium oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Bi	x	7440-69-9

Li	x	7439-93-2

RN 167994-88-9 HCAPLUS
CN Bismuth lithium oxide (BiLi3O4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	4	17778-80-2
Bi	1	7440-69-9
Li	3	7439-93-2

RN 203737-03-5 HCAPLUS
CN Bismuth lithium oxide (Bi2Li4O7) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	7	17778-80-2
Bi	2	7440-69-9
Li	4	7439-93-2

RN 847980-22-7 HCAPLUS
CN Bismuth lithium oxide (Bi3Li5O10) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	10	17778-80-2
Bi	3	7440-69-9
Li	5	7439-93-2

L75 ANSWER 4 OF 21 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:702154 HCAPLUS
DN 141:216671
TI Preparation of metal chalcogenides from reactions of metal compounds and chalcogen
IN Seo, Dong-kyun; Iancu, Nora; Wu, Liming
PA Arizona Board of Regents, Acting for and On Behalf of Arizona State University, USA
SO PCT Int. Appl., 53 pp.
CODEN: PIXXD2
DT **Patent**
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004073021	A2	20040826	WO 2004-US2929	20040202 <--
	WO 2004073021	A3	20050113		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI				
	RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	US 2006239882	A1	20061026	US 2006-544266	20060110 <--
PRAI	US 2003-444078P	P	20030131 <--		

US 2003-511482P P 20031015
WO 2004-US2929 W 20040202

AB A method of preparing metal chalcogenides from elemental metal or metal compds. has the following steps: providing at least one elemental metal or metal compound; providing at least one element from periodic table groups 13-15; providing at least one chalcogen; and combining and heating the chalcogen, the group 13-15 element and the metal at sufficient time and temperature to form a metal chalcogenide. A method of functionalizing the surface of semiconducting nanoparticles has the following steps: providing at least one metal compound; providing one chalcogenide having a cation selected from the group 13-15 (B, Al, Ga, In, Si, Ge, Sn, Pb, P, As, Sb and Bi); dissolving the chalcogenide in a 1st solution; dissolving the metal compound in a 2nd solution; providing and dissolving a functional capping agent in at least one of the solns. of the metal compds. and chalcogenide; combining all solns.; and maintaining the combined solution at a proper temperature for an appropriate time.

IC ICM H01L

CC 76-2 (Electric Phenomena)
Section cross-reference(s): 78

IT **Battery anodes**
(fabrication of chalcogenides for)

IT 584-08-7, Potassium carbonate 1312-43-2, Indium sesquioxide 7429-90-5, Aluminum, processes 7439-92-1, Lead, processes 7440-21-3, Silicon, processes 7440-31-5, Tin, processes 7440-36-0, Antimony, processes 7440-38-2, Arsenic, processes 7440-55-3, Gallium, processes 7440-56-4, Germanium, processes 7440-69-9, Bismuth, processes 7440-74-6, Indium, processes 7646-85-7, Zinc chloride, processes 7681-49-4, Sodium fluoride, processes 7723-14-0, Phosphorus, processes 7758-95-4, Lead dichloride 10108-64-2, Cadmium chloride **12232-99-4**, Bismuth sodium oxide (BiNaO3)
RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(in preparation of chalcogenides)

IT **12232-99-4**, Bismuth sodium oxide (BiNaO3)
RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(in preparation of chalcogenides)

RN 12232-99-4 HCAPLUS

CN Bismuth sodium oxide (BiNaO3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3	17778-80-2
Bi	1	7440-69-9
Na	1	7440-23-5

L75 ANSWER 5 OF 21 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:569197 HCAPLUS

DN 141:126282

TI **Cathode** for secondary **battery**, the **battery**, and manufacture of the **cathode**

IN Kawasaki, Daisuke; Kumeuchi, Tomokazu; Numata, Tatsuji

PA NEC Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF

DT **Patent**

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004199909	A	20040715	JP 2002-364409	20021216 <--
PRAI	JP 2002-364409		20021216 <--		

AB The **cathode** contains Li Bi oxide and Li Mn oxide. Preferably, the Li Bi oxide has peaks near 2θ =20, 26.5, and 30° on its Cu Kα x ray diffraction pattern. The **cathode** is prepared by mixing the Li Bi oxide, and Li Mn oxide with a binder and applying the mixture on a collector; and the Li Bi oxide is prepared by firing a mixture of a Li compound and a Bi compound in an O containing atmospheric at 350-750°.

IC ICM **H01M0004-58**
ICS C01G0029-00; C01G0045-00; **H01M0004-02**; **H01M0004-04**; **H01M0010-40**

CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary lithium **battery cathode** manuf; lithium bismuth oxide manganese oxide **battery cathode** manuf

IT **Battery cathodes**
(**cathodes** containing lithium manganese oxide and lithium bismuth oxide and their manufacture for secondary lithium **batteries**)

IT 176979-24-1, Lithium manganese oxide (Li1.12Mn1.88O4)
RL: DEV (Device component use); USES (Uses)
(**cathodes** containing lithium manganese oxide and lithium bismuth oxide and their manufacture for secondary lithium **batteries**)

IT **11086-13-8P**, Bismuth lithium oxide (BiLiO2) **12421-80-6P**, Bismuth lithium oxide (BiLi7O6) **12514-00-0P**, Bismuth lithium oxide (BiLi5O5) **130280-71-6P**, Bismuth lithium oxide **167994-88-9P**, Bismuth lithium oxide (BiLi3O4)
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(**cathodes** containing lithium manganese oxide and lithium bismuth oxide and their manufacture for secondary lithium **batteries**)

IT **11086-13-8P**, Bismuth lithium oxide (BiLiO2) **12421-80-6P**, Bismuth lithium oxide (BiLi7O6) **12514-00-0P**, Bismuth lithium oxide (BiLi5O5) **130280-71-6P**, Bismuth lithium oxide **167994-88-9P**, Bismuth lithium oxide (BiLi3O4)
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(**cathodes** containing lithium manganese oxide and lithium bismuth oxide and their manufacture for secondary lithium **batteries**)

RN 11086-13-8 HCAPLUS
CN Bismuth lithium oxide (BiLiO2) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	2	17778-80-2
Bi	1	7440-69-9
Li	1	7439-93-2

RN 12421-80-6 HCAPLUS
CN Bismuth lithium oxide (BiLi7O6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	6	17778-80-2
Bi	1	7440-69-9

Li	7	7439-93-2

RN 12514-00-0 HCAPLUS
CN Bismuth lithium oxide (BiLi5O5) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	5	17778-80-2
Bi	1	7440-69-9
Li	5	7439-93-2

RN 130280-71-6 HCAPLUS
CN Bismuth lithium oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Bi	x	7440-69-9
Li	x	7439-93-2

RN 167994-88-9 HCAPLUS
CN Bismuth lithium oxide (BiLi3O4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	4	17778-80-2
Bi	1	7440-69-9
Li	3	7439-93-2

L75 ANSWER 6 OF 21 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:872482 HCAPLUS
DN 139:352685
TI Manufacture of **anode** material for secondary nonaqueous-**electrolyte battery**
IN Fukuoka, Hirofumi; Aramata, Mikio; Miyawaki, Satoru; Ueno, Susumu; Momii, Kazuma
PA Shin-Etsu Chemical Industry Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT **Patent**
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2003317717	A	20031107	JP 2002-117432	20020419 <--
PRAI JP 2002-117432		20020419 <--		

NPA

AB The title **anode** material is manufactured by heating a mixture containing a Li ion-intercalating material and graphite powder under atmospheric containing an organic substance gas or vapor at 500-1300°. The Li ion-intercalating material may be selected from Si, MOx (M = Si, Ge, Sn, Pb, Bi, Sb, Zn, In, and/or Mg; x = 0.1-4), or LiMyOz (M = Si, Ge, Sn, Pb, Bi, Sb, Zn, In, and/or Mg; y = 0.1-4; z = 0.1-8). A **battery** equipped with the resulting **anode** provides high capacity and long cycle life.
IC ICM **H01M0004-48**
ICS **H01M0004-02; H01M0004-58; H01M0010-40**

CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)
ST lithium intercalating **anode** graphite manuf heating nonaq **battery**
IT Vapor deposition process
(chemical; heating in manufacture of Li-intercalating **anode** material containing graphite for secondary nonaq.-**electrolyte battery**)
IT **Battery anodes**
Heating
(heating in manufacture of Li-intercalating **anode** material containing graphite for secondary nonaq.-**electrolyte battery**)
IT 74-82-8, Methane, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(chemical-vapor deposition of; heating in manufacture of Li-intercalating **anode** material containing graphite for secondary nonaq.-**electrolyte battery**)
IT 7782-42-5P, Graphite, uses 110986-74-8P, Silicon oxide (SiO1.07)
RL: DEV (Device component use); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PYP (Physical process); PREP (Preparation); PROC (Process); USES (Uses)
(heating in manufacture of Li-intercalating **anode** material containing graphite for secondary nonaq.-**electrolyte battery**)
IT 7440-21-3, Silicon, uses 12188-25-9, Lithium tin oxide (Li2SnO3) 12315-28-5, Lithium germanium oxide (Li2GeO3) 20619-16-3, Germanium oxide (GeO) 21651-19-4, Tin oxide (SnO) 337529-55-2, Silicon oxide (SiO1-1.6) **615535-82-5**, Bismuth lithium oxide (BiLi2O4)
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(heating in manufacture of Li-intercalating **anode** material containing graphite for secondary nonaq.-**electrolyte battery**)
IT **615535-82-5**, Bismuth lithium oxide (BiLi2O4)
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(heating in manufacture of Li-intercalating **anode** material containing graphite for secondary nonaq.-**electrolyte battery**)
RN 615535-82-5 HCAPLUS
CN Bismuth lithium oxide (BiLi2O4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	4	17778-80-2
Bi	1	7440-69-9
Li	2	7439-93-2

L75 ANSWER 7 OF 21 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:853393 HCAPLUS
DN 139:340030
TI **Anode** material having conductive coating for secondary lithium ion **battery** and its manufacture
IN Fukuoka, Hirofumi; Miyawaki, Satoru; Aramata, Mikio; Ueno, Susumu; Momii, Kazuma
PA Shin-Etsu Chemical Industry Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT **Patent**
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003308837	A	~~20031031~~	JP 2002-116429	20020418 <--
PRAI	JP 2002-116429		20020418 <--		

NPD

AB The claimed **anode** material has a Li-intercalating material coated with a conductive film by chemical-vapor deposition. The claimed process comprises heat treating the Li-intercalating material under atmospheric containing an organic substance gas or vapor at 500-1300°. A **battery** equipped with the **anode** provides high charging-discharging capacity and long cycle life.

IC ICM **H01M0004-48**
ICS **H01M0004-02; H01M0004-58; H01M0010-40**

CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)

ST chem vapor deposition conductive coating **anode** lithium **battery**

IT **Battery anodes**
(chemical-vapor deposition of conductive coating on **anode** material for secondary lithium ion **battery**)

IT Vapor deposition process
(chemical; chemical-vapor deposition of conductive coating on **anode** material for secondary lithium ion **battery**)

IT 12188-25-9, Lithium tin oxide (Li2SnO3) 12315-28-5, Germanium lithium oxide (GeLi2O3) 20619-16-3, Germanium oxide (GeO) 21651-19-4, Tin oxide (SnO) **615535-82-5**, Bismuth lithium oxide (BiLi2O4)
RL: DEV (Device component use); USES (Uses)
(**anode**; chemical-vapor deposition of conductive coating on **anode** material for secondary lithium ion **battery**)

IT 7782-42-5P, Graphite, uses
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(coating; chemical-vapor deposition of conductive coating on **anode** material for secondary lithium ion **battery**)

IT **615535-82-5**, Bismuth lithium oxide (BiLi2O4)
RL: DEV (Device component use); USES (Uses)
(**anode**; chemical-vapor deposition of conductive coating on **anode** material for secondary lithium ion **battery**)

RN 615535-82-5 HCAPLUS

CN Bismuth lithium oxide (BiLi2O4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	4	17778-80-2
Bi	1	7440-69-9
Li	2	7439-93-2

L75 ANSWER 8 OF 21 HCAPLUS COPYRIGHT 2006 ACS on STN

AN **2000:643442** HCAPLUS

DN **133:215280**

TI Electroluminescent devices

IN Okada, Hiroyuki; Naka, Shigeki; Onagawa, Hiroyoshi; Fukumoto, Shigeru; Niho, Tetsuya

PA Hokuriku Electric Industry Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF

DT **Patent**

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000252082	A	20000914	JP 1999-50913	19990226 <--
PRAI	JP 1999-50913		19990226 <--		

AB The devices comprise: a glass substrate; an ITO 1st **electrode**; an organic electroluminescent laminate; and a Cs alloy 2nd **electrode** comprising Cs-O-Ag, Cs-Bi, Cs-O-Bi, Cs-O-Bi-Ag or Cs-Na-K-Sb.

IC ICM H05B0033-26
ICS H05B0033-14

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST electroluminescent org device cesium alloy **electrode**

IT **Electrodes**
Electroluminescent devices
Glass substrates
Laminated materials
(electroluminescent devices)

IT **Electrodes**
(transparent; electroluminescent devices)

IT 2085-33-8, Tris(8-quinolinolato)aluminum 7429-90-5, Aluminum, uses 12249-44-4, Cesium silver oxide (CsAgO) 50926-11-9, ITO 64787-67-3 65181-78-4, TPD 106698-55-9 **130280-78-3**, Bismuth cesium oxide 132086-05-6, Bismuth cesium silver oxide
RL: DEV (Device component use); USES (Uses)
(electroluminescent devices)

IT **130280-78-3**, Bismuth cesium oxide
RL: DEV (Device component use); USES (Uses)
(electroluminescent devices)

RN 130280-78-3 HCAPLUS

CN Bismuth cesium oxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Bi	x	7440-69-9
Cs	x	7440-46-2

L75 ANSWER 9 OF 21 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1998:764266 HCAPLUS

DN 130:40925

TI Secondary nonaqueous-**electrolyte battery** and its **anode**

IN Sato, Toshitada; Bito, Yasuhiko; Murata, Toshihide; Ito, Shuji; Matsuda, Hiromu; Toyoguchi, Yoshinori

PA Matsushita Electric Industrial Co., Ltd., Japan

SO Eur. Pat. Appl., 37 pp.
CODEN: EPXXDW

DT **Patent**

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 880187	A2	19981125	EP 1998-109095	19980519 <--
	EP 880187	A3	20000524		
	EP 880187	B1	20041124		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

	JP 11040159	A	19990212	JP 1998-134928	19980518 <--
	JP 3565478	B2	20040915		
	CN 1200581	A	19981202	CN 1998-109226	19980522 <--
	CN 1121728	B	20030917		
PRAI	JP 1997-132298	A	19970522 <--		

AB An **anode** active material of a long-life title **battery** with high energy d. and showing excellent cycle life comprises LipZqXr, where Z represents ≥2 elements selected from the group of metals and semimetals ≥1 of which is selected from Na, K, Rb, Cs, Mg, Ca, Sr, Ba, Sc, Y, La, Ce, Ti, Zr, Hf, V, Nb, Ta, Cr, Mo, W, Mn, Fe, Co, Ni, Cu, Ag, Zn, Cd and Pd; X is ≥1 element selected from O, S, Se and Te; $0 < (p + q + r) \leq 25$; $p < 10$, $0 < q < 10$; and $0 < r \leq 8$.

IC ICM **H01M0004-48**
ICS **H01M0004-58**

CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)

ST **battery** nonaq **electrolyte** complex oxide **anode** ; sulfide complex nonaq **electrolyte battery anode**; telluride complex nonaq **electrolyte battery anode**; selenide complex nonaq **electrolyte battery anode**

IT **Battery anodes**
(complex oxide and selenide and sulfide and telluride nonaq.-**electrolyte**)

IT 1302-42-7 6834-92-0, Sodium silicate (Na2SiO3) 10006-28-7, Potassium silicate (K2SiO3) 10101-39-0 11071-64-0 11073-75-9 11078-41-4, Aluminum strontium sulfide (Al2SrS4) 11078-42-5, Aluminum strontium selenide (Al2SrSe4) 11080-70-9, Gallium strontium selenide (Ga2SrSe4) 11094-01-2 12003-63-3 12004-04-5, Aluminum barium oxide (Al2BaO4) 12004-37-4, Aluminum strontium oxide (Al2SrO4) 12009-18-6, Barium tin oxide (BaSnO3) 12009-46-0, Barium germanium oxide (Ba2GeO4) 12013-41-1, Calcium indium oxide (CaIn2O4) 12013-46-6, Calcium tin oxide (CaSnO3) 12013-64-8, Calcium germanium oxide (Ca2GeO4) 12013-65-9 12014-04-9, Cadmium indium oxide (CdIn2O4) 12014-05-0, Cadmium indium selenide (CdIn2Se4) 12014-13-0, Cadmium tin oxide (CdSnO3) 12025-13-7, Germanium magnesium oxide (GeMg2O4) 12025-14-8 12025-20-6, Germanium sodium oxide (GeNa4O4) 12025-28-4, Germanium rubidium oxide (GeRb4O4) 12025-29-5, Germanium zinc oxide (GeZn2O4) 12030-23-8, Indium strontium oxide (In2SrO4) 12030-26-1, Indium zinc selenide (In2ZnSe4) 12030-28-3, Indium zinc telluride (In2ZnTe4) 12030-96-5 12032-29-0 12034-31-0 12042-68-1 12047-12-0, Barium gallium oxide (BaGa2O4) 12047-25-5 12056-00-7, Indium magnesium oxide (In2MgO4) 12056-03-0, Indium zinc oxide (In2ZnO4) 12056-05-2, Indium zinc sulfide (In2ZnS4) 12058-66-1 12058-76-3 12063-93-3 12064-13-0, Gallium magnesium oxide (Ga2MgO4) 12064-18-5, Gallium zinc oxide (Ga2ZnO4) 12064-22-1, Gallium zinc sulfide (Ga2ZnS4) 12065-00-8 12068-51-8, Aluminum magnesium oxide (Al2MgO4) 12068-53-0, Aluminum zinc oxide (Al2ZnO4) 12138-48-6 12139-12-7, Cadmium gallium oxide (CdGa2O4) 12139-26-3, Cadmium germanium oxide (Cd2GeO4) 12140-76-0, Germanium strontium oxide (GeSr2O4) 12140-79-3 12142-31-3 12142-33-5 12143-34-9, Strontium tin oxide (SrSnO3) 12180-94-8, Calcium gallium oxide (CaGa2O4) 12196-48-4 12196-51-9, Indium sodium sulfide (InNaS2) 12201-47-7 12202-06-1, Strontium zinc oxide (SrZnO2) 12208-83-2 12218-60-9, Germanium zinc sulfide (GeZn2S4) 12230-87-4, Barium zinc oxide (BaZnO2) 12231-00-4 12231-04-8 12231-35-5 **12232-99-4**, Bismuth sodium oxide (BiNaO3) 12252-16-3, Aluminum cadmium oxide (Al2CdO4) 12271-58-8 , Aluminum zinc sulfide (Al2ZnS4) 12298-00-9, Gallium magnesium sulfide (Ga2MgS4) 12306-02-4 12315-16-1, Gallium strontium oxide (Ga2SrO4) 12359-71-6, Aluminum cadmium selenide (Al2CdSe4) 12359-83-0, Aluminum zinc selenide (Al2ZnSe4) 12370-60-4, Barium cadmium oxide (BaCdO2)

12370-89-7, Cadmium gallium selenide (CdGa2Se4) 12370-92-2 12382-62-6, Gallium zinc selenide (Ga2ZnSe4) 12396-71-3 12421-31-7, Aluminum cadmium telluride (Al2CdTe4) 12421-34-0, Aluminum zinc telluride (Al2ZnTe4) 12422-10-5, Cadmium gallium telluride (CdGa2Te4) 12422-92-3, Gallium zinc telluride (Ga2ZnTe4) 12432-08-5 12432-10-9 12437-38-6 12439-80-4 12439-82-6, Lead zinc oxide (PbZnO3) 12442-30-7, Cadmium zinc selenide (CdZnSe2) 12500-06-0 12534-19-9 12534-22-4 12589-46-7 **12589-75-2** 12590-00-0 12592-70-0, Gallium strontium sulfide (Ga2SrS4) 12775-70-1, Cadmium lead oxide (CdPbO3) 13255-26-0, Barium silicate (BaSiO3) 13451-00-8 13477-19-5 13776-74-4 15123-62-3 17374-67-3 19299-00-4 39297-18-2 39297-20-6, Aluminum strontium telluride (Al2SrTe4) 39297-27-3 39297-28-4 39297-65-9, Gallium strontium telluride (Ga2SrTe4) 39297-73-9 39297-74-0 39297-75-1, Indium strontium telluride (In2SrTe4) 39466-56-3, Cadmium zinc sulfide (CdZnS2) 50864-25-0 51403-77-1 51403-85-1 51403-86-2 51403-87-3 51404-02-5 51404-22-9 51404-23-0 51680-91-2 51882-20-3 51913-20-3 56831-86-8, Aluminum magnesium telluride (Al2MgTe4) 56832-17-8 56832-18-9, Indium magnesium telluride (In2MgTe4) 58499-92-6 58500-08-6 58500-11-1 58500-59-7 59087-51-3, Cadmium zinc oxide (CdZnO2) 60874-08-0, Barium indium oxide (BaIn2O4) 60935-89-9 60968-55-0, Cadmium germanium selenide (Cd2GeSe4) 60969-07-5 61029-03-6, Germanium zinc selenide (GeZn2Se4) 61036-15-5, Aluminum magnesium selenide (Al2MgSe4) 61036-25-7 61216-36-2, Aluminum sodium selenide (AlNaSe2) 61216-37-3 61216-42-0 61216-43-1 61216-45-3 61216-53-3 61231-60-5 61497-89-0 63018-05-3, Rubidium zinc oxide (Rb2ZnO2) 67740-18-5 67847-61-4, Aluminum calcium selenide (Al2CaSe4) 75718-99-9, Barium cadmium germanium sulfide (BaCdGeS4) 79470-80-7, Aluminum barium selenide (Al2BaSe4) 86567-81-9, Aluminum calcium sulfide (Al2CaS4) 91698-66-7, Barium lead silicate (BaPb(SiO4)) 99807-78-0 100736-82-1 107385-82-0 111569-12-1, Cadmium zinc telluride (Cd0.5Zn0.5Te) 118391-36-9, Gallium magnesium selenide (Ga2MgSe4) 121458-95-5 124358-93-6, Strontium zinc sulfide (SrZnS2) 129292-43-9, Bismuth strontium oxide (Bi2SrO6) 133494-86-7, Cadmium calcium oxide (CdCaO2) 142747-83-9, Bismuth zinc oxide (Bi2ZnO6) 143310-91-2, Barium lead strontium oxide (Ba0.5PbSr0.5O3) 146290-10-0, Magnesium zinc telluride (Mg0.5Zn0.5Te) 151751-03-0, Potassium tin selenide (K2SnSe3) 155629-04-2, Magnesium zinc selenide (Mg0.5Zn0.5Se) 155629-05-3, Magnesium zinc sulfide (Mg0.5Zn0.5S) 159460-69-2, Cadmium magnesium telluride (Cd0.5Mg0.5Te) 164465-85-4, Strontium zinc selenide (Sr0.5Zn0.5Se) 171067-34-8, Aluminum potassium sulfide (AlKS2) 174818-45-2, Cadmium indium telluride (CdInTe4) 178426-93-2, Calcium zinc oxide (Ca0.5Zn0.5O) 193340-54-4, Bismuth magnesium oxide (Bi2MgO6) **203737-11-5**, Bismuth rubidium oxide (BiRbO3) 215172-96-6, Magnesium zinc oxide (MgZnO2) 216597-81-8, Cadmium magnesium oxide (CdMgO2) 216597-84-1, Bismuth calcium oxide (Bi2CaO6) 216597-86-3, Cadmium strontium oxide (CdSrO2) 216597-92-1, Barium bismuth oxide (BaBi2O6) 216597-96-5, Barium strontium tin oxide (Ba0.5Sr0.5SnO3) 216597-97-6, Barium strontium tin oxide (Ba0.7Sr0.3SnO3) 216597-98-7, Barium strontium tin oxide (Ba0.9Sr0.1SnO3) 216597-99-8, Barium calcium tin oxide (Ba0.5Ca0.5SnO3) 216598-00-4, Barium magnesium tin oxide (Ba0.5Mg0.5SnO3) 216598-01-5, Indium rubidium oxide (InRbO2) 216598-03-7, Aluminum strontium tin oxide (Al2SrSnO5) 216598-04-8, Aluminum strontium oxide silicate (Al2SrO(SiO4)) 216598-05-9, Aluminum lead strontium oxide (Al2PbSrO5) 216598-06-0, Aluminum cadmium strontium oxide (Al2CdSrO4) 216598-07-1, Aluminum bismuth strontium oxide (AlBiSrO4) 216598-08-2, Aluminum indium strontium oxide (AlInSrO3) 216598-09-3, Aluminum strontium zinc oxide (Al2SrZnO4) 216598-10-6, Aluminum gallium strontium oxide (AlGaSrO3) 216598-11-7, Aluminum germanium strontium oxide (Al2GeSrO4) 216598-12-8 216598-13-9, Lead

strontium tin oxide (PbSrSnO4) 216598-14-0, Cadmium strontium tin oxide (CdSrSnO3) 216598-15-1, Bismuth strontium tin oxide (Bi2SrSnO7) 216598-16-2, Indium strontium tin oxide (In2SrSnO5) 216598-17-3, Strontium tin zinc oxide (SrSnZnO3) 216598-18-4, Gallium strontium tin oxide (Ga2SrSnO5) 216598-19-5, Germanium strontium tin oxide (GeSrSn2O4) 216598-20-8, Aluminum barium oxide silicate (Al2BaO(SiO4)) 216598-21-9 216598-23-1, Barium cadmium silicate (BaCd(SiO3)) 216598-24-2, Barium bismuth oxide silicate (BaBi2O3(SiO4)) 216598-25-3, Barium indium oxide silicate (BaIn2O(SiO4)) 216598-26-4, Barium zinc silicate (BaZn(SiO3)) 216598-27-5, Barium gallium oxide silicate (BaGa2O(SiO4)) 216598-28-6, Barium germanium oxide silicide (BaGeO4Si2) 216598-29-7, Aluminum barium lead oxide (Al2BaPbO5) 216598-30-0, Barium lead tin oxide (BaPbSnO4) 216598-31-1, Barium cadmium lead oxide (BaCdPbO3) 216598-32-2, Barium bismuth lead oxide (BaBi2PbO7) 216598-33-3, Barium indium lead oxide (BaIn2PbO5) 216598-34-4, Barium lead zinc oxide (BaPbZnO3) 216598-35-5, Barium gallium lead oxide (BaGa2PbO5) 216598-36-6, Barium germanium lead oxide (BaGePb2O4) 216598-37-7, Bismuth cadmium oxide (BiCdO4) 216598-38-8, Aluminum barium bismuth oxide (AlBaBiO4) 216598-39-9, Barium bismuth tin oxide (BaBi2SnO7) 216598-40-2, Barium bismuth cadmium oxide (BaBi2CdO6) 216598-41-3, Barium bismuth indium oxide (BaBiInO4) 216598-42-4, Barium bismuth zinc oxide (BaBi2ZnO6) 216598-43-5, Barium bismuth gallium oxide (BaBiGaO4) 216598-44-6, Barium bismuth germanium oxide (BaBi2GeO4) 216598-45-7, Indium strontium oxide silicate (In2SrO(SiO4)) 216598-46-8, Indium lead strontium oxide (In2PbSrO5) 216598-47-9, Cadmium indium strontium oxide (CdIn2SrO4) 216598-48-0, Bismuth indium strontium oxide (BiInSrO4) 216598-49-1, Indium strontium zinc oxide (In2SrZnO4) 216598-50-4, Gallium indium strontium oxide (GaInSrO3) 216598-51-5, Germanium indium strontium oxide (GeIn2SrO4) 216598-52-6, Tin zinc oxide (SnZnO4)
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(**anode** in high-performance nonaq.-**electrolyte batteries**)

IT 216598-53-7, Aluminum gallium magnesium oxide (AlGaMgO3) 216598-54-8, Gallium magnesium tin oxide (Ga2MgSnO5) 216598-55-9, Gallium magnesium oxide silicate (Ga2MgO3(SiO4)) 216598-56-0, Gallium lead magnesium oxide (Ga2PbMgO5) 216598-57-1, Cadmium gallium magnesium oxide (CdGa2MgO4) 216598-58-2, Bismuth gallium magnesium oxide (BiGaMgO4) 216598-59-3, Gallium indium magnesium oxide (GaInMgO3) 216598-60-6, Gallium magnesium zinc oxide (Ga2MgZnO4) 216598-61-7, Gallium germanium magnesium oxide (Ga2GeMgO4) 216598-62-8, Aluminum germanium magnesium oxide (Al2GeMgO5) 216598-63-9, Germanium magnesium tin oxide (GeMgSnO4) 216598-64-0 216598-65-1, Germanium lead magnesium oxide (GePbMgO4) 216598-66-2, Cadmium germanium magnesium oxide (CdGeMgO3) 216598-67-3, Bismuth germanium magnesium oxide (Bi2GeMgO7) 216598-68-4, Germanium indium magnesium oxide (GeIn2MgO5) 216598-69-5, Germanium magnesium zinc oxide (GeMgZnO3) 216598-70-8, Gallium germanium magnesium oxide (Ga2GeMgO5) 216598-71-9, Lead magnesium sulfide (PbMgS3) 216598-72-0, Cadmium magnesium sulfide (CdMgS2) 216598-73-1, Bismuth magnesium sulfide (Bi2MgS6) 216598-74-2, Calcium lead sulfide (CaPbS3) 216598-75-3, Cadmium calcium sulfide (CdCaS2) 216598-76-4, Bismuth calcium sulfide (Bi2CaS6) 216598-77-5 216598-78-6, Lead strontium sulfide (PbSrS3) 216598-79-7, Cadmium strontium sulfide (CdSrS2) 216598-80-0, Bismuth strontium sulfide (Bi2SrS6) 216598-81-1 216598-82-2, Barium lead sulfide (BaPbS3) 216598-83-3, Barium bismuth sulfide (BaBi2S6) 216598-84-4, Barium strontium tin sulfide (Ba0.5Sr0.5SnS3) 216598-85-5, Barium strontium tin sulfide (Ba0.7Sr0.3SnS3) 216598-86-6, Barium strontium tin sulfide (Ba0.9Sr0.1SnS3) 216598-87-7, Barium calcium tin sulfide (Ba0.5Ca0.5SnS3) 216598-88-8, Barium magnesium tin sulfide (Ba0.5Mg0.5SnS3) 216598-89-9 216598-90-2, Barium lead strontium sulfide (Ba0.5PbSr0.5S3) 216598-91-3, Aluminum sodium sulfide (AlNaS2)

216598-92-4, Lead sodium sulfide (PbNa2S3) 216598-93-5, Bismuth sodium sulfide (BiNaS3) 216598-94-6 216598-95-7, Lead potassium sulfide (PbK2S3) 216598-96-8, Cadmium potassium sulfide (CdK2S2) 216598-97-9, Bismuth potassium sulfide (BiKS3) 216598-98-0, Potassium zinc sulfide (K2ZnS2) 216598-99-1, Gallium potassium sulfide (GaKS2) 216599-00-7, Germanium potassium sulfide (GeK4S4) 216599-01-8, Aluminum sodium tin sulfide (Al2Na2SnS5) 216599-02-9, Aluminum sodium sulfide thiosilicate (Al2Na2S(SiS4)) 216599-03-0, Aluminum lead sodium sulfide (Al2PbNa2S5) 216599-04-1, Aluminum cadmium sodium sulfide (Al2CdNa2S4) 216599-05-2, Aluminum bismuth sodium sulfide (AlBiNa2S4) 216599-06-3, Aluminum indium sodium sulfide (AlInNa2S3) 216599-07-4, Aluminum sodium zinc sulfide (Al2Na2ZnS4) 216599-08-5, Aluminum gallium sodium sulfide (AlGaNa2S3) 216599-09-6, Aluminum germanium sodium sulfide (Al2GeNa2S4) 216599-10-9, Aluminum strontium tin sulfide (Al3SrSnS5) 216599-11-0 216599-12-1, Lead strontium tin sulfide (PbSrSnS4) 216599-13-2, Cadmium strontium tin sulfide (CdSrSnS3) 216599-14-3, Bismuth strontium tin sulfide (Bi2SrSnS7) 216599-15-4, Indium strontium tin sulfide (In2SrSnS5) 216599-16-5, Strontium tin zinc sulfide (SrSnZnS3) 216599-17-6, Gallium strontium tin sulfide (Ga2SrSnS5) 216599-18-7, Germanium strontium tin sulfide (GeSrSn2S4) 216599-19-8, Aluminum barium sulfide thiosilicate (Al2BaS(SiS4)) 216599-20-1 216599-21-2 216599-22-3, Barium cadmium silicide sulfide (BaCdSiS3) 216599-23-4, Barium bismuth sulfide thiosilicate (BaBi2S3(SiS4)) 216599-24-5, Barium indium sulfide thiosilicate (BaIn2S(SiS4)) 216599-25-6, Barium zinc silicide sulfide (BaZnSiS3) 216599-26-7, Barium gallium sulfide thiosilicate (BaGa2S(SiS4)) 216599-27-8, Barium germanium silicide sulfide (BaGeSi2S4) 216599-28-9, Aluminum calcium lead sulfide (Al2CaPbS5) 216599-29-0, Calcium lead tin sulfide (CaPbSnS4) 216599-30-3 216599-31-4, Cadmium calcium lead sulfide (CdCaPbS3) 216599-32-5, Bismuth calcium lead sulfide (Bi2CaPbS7) 216599-33-6, Calcium indium lead sulfide (CaIn2PbS5) 216599-34-7, Calcium lead zinc sulfide (CaPbZnS3) 216599-35-8, Calcium gallium lead sulfide (CaGa2PbS5) 216599-36-9, Calcium germanium lead sulfide (CaGePb2S4) 216599-37-0, Aluminum cadmium calcium sulfide (Al2CdCaS4) 216599-38-1, Cadmium calcium tin sulfide (CdCaSnS3) 216599-39-2, Cadmium calcium silicide sulfide (CdCaSiS3) 216599-40-5, Bismuth cadmium calcium sulfide (BiCdCaS4) 216599-41-6, Cadmium calcium indium sulfide (CdCaIn2S4) 216599-42-7, Cadmium calcium zinc sulfide (CdCaZnS2) 216599-43-8, Cadmium calcium gallium sulfide (CdCaGa2S5) 216599-44-9, Cadmium calcium germanium sulfide (Cd2CaGeS5) 216599-45-0, Aluminum bismuth magnesium sulfide (AlBiMgS5) 216599-46-1, Bismuth magnesium tin sulfide (Bi2MgSnS8) 216599-47-2, Bismuth magnesium sulfide thiosilicate (Bi2MgS4(SiS4)) 216599-48-3, Bismuth lead magnesium sulfide (Bi2PbMgS8) 216599-49-4, Bismuth cadmium magnesium sulfide (Bi2CdMgS7) 216599-50-7, Bismuth indium magnesium sulfide (BiInMgS5) 216599-51-8, Bismuth magnesium zinc sulfide (Bi2MgZnS7) 216599-52-9, Bismuth gallium magnesium sulfide (BiGaMgS5) 216599-53-0, Bismuth germanium magnesium sulfide (Bi2GeMgS5) 216599-54-1, Aluminum indium potassium sulfide (AlInK2S4) 216599-55-2, Indium potassium tin sulfide (In2K2SnS6) 216599-56-3, Indium potassium sulfide thiosilicate (In2K2S2(SiS4)) 216599-57-4, Indium lead potassium sulfide (In2PbK2S6) 216599-58-5, Cadmium indium potassium sulfide (CdIn2K2S5) 216599-59-6, Bismuth indium potassium sulfide (BiInK2S5) 216599-60-9, Indium potassium zinc sulfide (In2K2ZnS5) 216599-61-0, Gallium indium potassium sulfide (GaInK2S4) 216599-62-1, Germanium indium potassium sulfide (GeIn2K2S5) 216599-63-2, Tin zinc sulfide (SnZnS4) 216599-64-3 216599-65-4, Lead zinc sulfide (PbZnS3) 216599-66-5, Bismuth zinc sulfide (Bi2ZnS6) 216599-67-6, Aluminum gallium strontium sulfide (AlGaSrS4) 216599-68-7, Gallium strontium tin sulfide (Ga2SrSnS6) 216599-69-8, Gallium strontium sulfide thiosilicate (Ga2SrS4(SiS4)) 216599-70-1, Gallium lead strontium sulfide

(Ga2PbSrS6) 216599-71-2, Cadmium gallium strontium sulfide (CdGa2SrS5) 216599-72-3, Bismuth gallium strontium sulfide (BiGaSrS5) 216599-73-4, Gallium indium strontium sulfide (GaInSrS4) 216599-74-5, Gallium strontium zinc sulfide (Ga2SrZnS5) 216599-75-6, Gallium germanium strontium sulfide (Ga2GeSrS5) 216599-76-7, Aluminum barium germanium sulfide (Al2BaGeS6) 216599-77-8, Barium germanium tin sulfide (BaGeSnS5) 216599-78-9, Barium germanium sulfide thiosilicate (BaGeS(SiS4)) 216599-79-0, Barium germanium lead sulfide (BaGePbS5) 216599-80-3, Barium bismuth germanium sulfide (BaBi2GeS8) 216599-81-4, Barium germanium indium sulfide (BaGeIn2S6) 216599-82-5, Barium germanium zinc sulfide (BaGeZnS4) 216599-83-6, Barium gallium germanium sulfide (BaGa2GeS6) 216599-84-7, Magnesium tin selenide (MgSnSe3) 216599-85-8 216599-86-9, Lead magnesium selenide (PbMgSe3) 216599-87-0, Cadmium magnesium selenide (CdMgSe2) 216599-88-1, Bismuth magnesium selenide (Bi2MgSe6) 216599-89-2, Germanium magnesium selenide (GeMg2Se4) 216599-90-5, Calcium tin selenide (CaSnSe3) 216599-91-6 216599-92-7, Calcium lead selenide (CaPbSe3) 216599-93-8, Cadmium calcium selenide (CdCaSe2) 216599-94-9, Bismuth calcium selenide (Bi2CaSe6) 216599-95-0, Calcium indium selenide (CaIn2Se4) 216599-96-1, Calcium zinc selenide (CaZnSe2) 216599-97-2, Calcium germanium selenide (Ca2GeSe4) 216599-99-4, Strontium tin selenide (SrSnSe3) 216600-00-9 216600-01-0, Lead strontium selenide (PbSrSe3) 216600-02-1, Cadmium strontium selenide (CdSrSe2) 216600-03-2, Bismuth strontium selenide (Bi2SrSe6) 216600-04-3, Germanium strontium selenide (GeSr2Se4) 216600-05-4 216600-06-5, Barium lead selenide (BaPbSe3) 216600-07-6, Barium cadmium selenide (BaCdSe2) 216600-08-7, Barium bismuth selenide (BaBi2Se6) 216600-09-8, Barium zinc selenide (BaZnSe2) 216600-10-1, Barium germanium selenide (Ba2GeSe4) 216600-11-2, Barium strontium tin selenide (Ba0.5Sr0.5SnSe3) 216600-12-3, Barium strontium tin selenide (Ba0.9Sr0.1SnSe3) 216600-13-4, Barium calcium tin selenide (Ba0.5Ca0.5SnSe3) 216600-14-5, Barium magnesium tin selenide (Ba0.5Mg0.5SnSe3) 216600-15-6 216600-16-7, Barium lead strontium selenide (Ba0.5PbSr0.5Se3) 216600-17-8 216600-18-9, Lead sodium selenide (PbNa2Se3) 216600-19-0, Cadmium sodium selenide (CdNa2Se2) 216600-20-3, Bismuth sodium selenide (BiNaSe3) 216600-21-4, Sodium zinc selenide (Na2ZnSe2) 216600-22-5, Gallium sodium selenide (GaNaSe2) 216600-23-6 216600-24-7, Lead potassium selenide (PbK2Se3) 216600-25-8, Cadmium potassium selenide (CdK2Se2) 216600-26-9, Bismuth potassium selenide (BiKSe3) 216600-27-0, Potassium zinc selenide (K2ZnSe2) 216600-28-1, Germanium potassium selenide (GeK4Se4) 216600-29-2 216600-30-5, Aluminum cadmium strontium selenide (Al2CdSrSe5) 216600-31-6, Aluminum bismuth strontium selenide (AlBiSrSe5) 216600-32-7, Aluminum indium strontium selenide (AlInSrSe4) 216600-33-8, Aluminum strontium zinc selenide (Al2SrZnSe5) 216600-34-9, Aluminum gallium strontium selenide (AlGaSrSe4) 216600-35-0, Aluminum germanium strontium selenide (Al2GeSrSe5) 216600-36-1, Aluminum barium tin selenide (Al2BaSnSe6) 216600-37-2, Aluminum lead strontium selenide (Al2PbSrSe6) 216600-38-3, Barium tin selenide selenosilicate (BaSnSe(SiSe4)) 216600-39-4, Barium lead tin selenide (BaPbSnSe5) 216600-40-7, Barium cadmium tin selenide (BaCdSnSe4) 216600-41-8, Barium bismuth tin selenide (BaBi2SnSe8) 216600-42-9, Barium indium tin selenide (BaIn2SnSe6) 216600-43-0, Barium gallium tin selenide (BaGa2SnSe6) 216600-44-1, Barium germanium tin selenide (BaGeSn2Se5) 216600-45-2 216600-46-3, Potassium tin selenide selenosilicate (K2SnSe(SiSe4)) 216600-47-4, Lead potassium selenide selenosilicate (PbK2Se(SiSe4)) 216600-48-5, Barium tin zinc selenide (BaSnZnSe4) 216600-49-6 216600-50-9 216600-51-0, Indium potassium selenide selenosilicate (In2K2Se2(SiSe4)) 216600-52-1 216600-53-2 216600-54-3, Germanium potassium selenide silicide (GeK2Se5Si2) 216600-55-4, Aluminum lead magnesium selenide (Al2PbMgSe6) 216600-56-5,

Lead magnesium tin selenide (PbMgSnSe5) 216600-57-6, Lead magnesium selenide selenosilicate (PbMgSe(SiSe4)) 216600-58-7, Cadmium lead magnesium selenide (CdPbMgSe4) 216600-59-8, Bismuth lead magnesium selenide (Bi2PbMgSe8) 216600-60-1, Indium lead magnesium selenide (In2PbMgSe6) 216600-61-2, Lead magnesium zinc selenide (PbMgZnSe4) 216600-62-3, Gallium lead magnesium selenide (Ga2PbMgSe6) 216600-63-4, Germanium lead magnesium selenide (GePb2MgSe5) 216600-64-5, Cadmium tin selenide (CdSnSe3) 216600-65-6 216600-66-7, Cadmium lead selenide (CdPbSe3) 216600-67-8, Bismuth cadmium selenide (BiCdSe4) 216600-68-9, Aluminum bismuth calcium selenide (AlBiCaSe5) 216600-69-0, Bismuth calcium tin selenide (Bi2CaSnSe8) 216600-70-3, Bismuth calcium selenide selenosilicate (Bi2CaSe4(SiSe4)) 216600-71-4, Bismuth calcium lead selenide (Bi2CaPbSe8) 216600-72-5, Bismuth cadmium calcium selenide (Bi2CdCaSe7) 216600-73-6, Bismuth calcium indium selenide (BiCaInSe5) 216600-74-7, Bismuth calcium zinc selenide (Bi2CaZnSe7) 216600-75-8, Bismuth calcium gallium selenide (BiCaGaSe5) 216600-76-9, Bismuth calcium germanium selenide (Bi2CaGeSe5) 216600-77-0, Indium strontium tin selenide (In2SrSnSe6) 216600-78-1, Indium lead strontium selenide (In2PbSrSe6) 216600-79-2, Cadmium indium strontium selenide (CdIn2SrSe5) 216600-80-5, Bismuth indium strontium selenide (BiInSrSe5) 216600-81-6, Indium strontium zinc selenide (In2SrZnSe5) 216600-82-7, Gallium indium strontium selenide (GaInSrSe4) 216600-83-8, Germanium indium strontium selenide (GeIn2SrSe5) 216600-84-9, Tin zinc selenide (SnZnSe4) 216600-85-0 216600-86-1, Lead zinc selenide (PbZnSe3) 216600-87-2, Bismuth zinc selenide (Bi2ZnSe6) 216600-88-3, Aluminum gallium magnesium selenide (AlGaMgSe4) 216600-89-4, Gallium magnesium tin selenide (Ga2MgSnSe6) 216600-90-7
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(**anode** in high-performance nonaq.-**electrolyte batteries**)

IT 216600-91-8, Cadmium gallium magnesium selenide (CdGa2MgSe5) 216600-92-9, Bismuth gallium magnesium selenide (BiGaMgSe5) 216600-93-0, Gallium indium magnesium selenide (GaInMgSe4) 216600-94-1, Gallium magnesium zinc selenide (Ga2MgZnSe5) 216600-95-2, Gallium germanium magnesium selenide (Ga2GeMgSe5) 216600-96-3, Aluminum germanium strontium selenide (Al2GeSrSe6) 216600-97-4, Germanium strontium tin selenide (GeSrSnSe5) 216600-98-5 216600-99-6, Germanium lead strontium selenide (GePbSrSe5) 216601-00-2, Cadmium germanium strontium selenide (CdGeSrSe4) 216601-01-3, Bismuth germanium strontium selenide (Bi2GeSrSe8) 216601-02-4, Germanium indium strontium selenide (GeIn2SrSe6) 216601-03-5, Germanium strontium zinc selenide (GeSrZnSe4) 216601-04-6, Gallium germanium strontium selenide (Ga2GeSrSe6) 216601-05-7, Magnesium tin telluride (MgSnTe3) 216601-06-8, Lead magnesium telluride (PbMgTe3) 216601-07-9, Bismuth magnesium telluride (Bi2MgTe6) 216601-09-1, Germanium magnesium telluride (GeMg2Te4) 216601-10-4, Aluminum calcium telluride (Al2CaTe4) 216601-11-5, Calcium tin telluride (CaSnTe3) 216601-12-6 216601-13-7, Calcium lead telluride (CaPbTe3) 216601-14-8, Cadmium calcium telluride (CdCaTe2) 216601-15-9, Bismuth calcium telluride (Bi2CaTe6) 216601-16-0, Calcium indium telluride (CaIn2Te4) 216601-17-1, Calcium zinc telluride (CaZnTe2) 216601-18-2, Calcium gallium telluride (CaGa2Te4) 216601-19-3, Calcium germanium telluride (Ca2GeTe4) 216601-21-7, Strontium tin telluride (SrSnTe3) 216601-22-8 216601-23-9, Lead strontium telluride (PbSrTe3) 216601-24-0, Cadmium strontium telluride (CdSrTe2) 216601-25-1, Bismuth strontium telluride (Bi2SrTe6) 216601-27-3, Strontium zinc telluride (SrZnTe2) 216601-29-5, Germanium strontium telluride (GeSr2Te4) 216601-30-8, Barium tin telluride (BaSnTe3) 216601-31-9 216601-32-0, Barium lead telluride (BaPbTe3) 216601-33-1, Barium cadmium telluride (BaCdTe2) 216601-34-2, Barium bismuth telluride (BaBi2Te6) 216601-35-3, Barium zinc telluride

(BaZnTe2) 216601-36-4, Barium germanium telluride (Ba2GeTe4) 216601-37-5, Barium strontium tin telluride (Ba0.5Sr0.5SnTe3) 216601-38-6, Barium strontium tin telluride (Ba0.7Sr0.3SnTe3) 216601-39-7, Barium strontium tin telluride (Ba0.9Sr0.1SnTe3) 216601-40-0, Barium magnesium tin telluride (Ba0.5Mg0.5SnTe3) 216601-41-1 216601-42-2, Barium lead strontium telluride (Ba0.5PbSr0.5Te3) 216601-43-3, Sodium tin telluride (Na2SnTe3) 216601-44-4 216601-45-5, Lead sodium telluride (PbNa2Te3) 216601-46-6, Cadmium sodium telluride (CdNa2Te2) 216601-47-7, Bismuth sodium telluride (BiNaTe3) 216601-48-8, Sodium zinc telluride (Na2ZnTe2) 216601-49-9, Germanium sodium telluride (GeNa4Te4) 216601-50-2, Potassium tin telluride (K2SnTe3) 216601-51-3, Lead potassium telluride (PbK2Te3) 216601-52-4, Cadmium potassium telluride (CdK2Te2) 216601-53-5, Bismuth potassium telluride (BiKTe3) 216601-54-6, Potassium zinc telluride (K2ZnTe2) 216601-55-7, Aluminum strontium tin telluride (Al2SrSnTe6) 216601-56-8 216601-57-9, Aluminum lead strontium telluride (Al2PbSrTe6) 216601-58-0, Aluminum cadmium strontium telluride (Al2CdSrTe5) 216601-59-1, Aluminum bismuth strontium telluride (AlBiSrTe5) 216601-60-4, Aluminum indium strontium telluride (AlInSrTe4) 216601-61-5, Aluminum strontium zinc telluride (Al2SrZnTe5) 216601-62-6, Aluminum gallium strontium telluride (AlGaSrTe4) 216601-63-7, Aluminum germanium strontium telluride (Al2GeSrTe5) 216601-64-8, Aluminum barium tin telluride (Al2BaSnTe6) 216601-65-9, Barium tin telluride tellurosilicate (BaSnTe(SiTe4)) 216601-66-0, Barium lead tin telluride (BaPbSnTe5) 216601-67-1, Barium cadmium tin telluride (BaCdSnTe4) 216601-68-2, Barium bismuth tin telluride (BaBi2SnTe8) 216601-69-3, Barium indium tin telluride (BaIn2SnTe5) 216601-70-6, Barium tin zinc telluride (BaSnZnTe4) 216601-71-7, Barium gallium tin telluride (BaGa2SnTe6) 216601-72-8, Barium germanium tin telluride (BaGeSn2Te5) 216601-73-9 216601-74-0, Potassium tin telluride tellurosilicate (K2SnTe(SiTe4)) 216601-75-1, Lead potassium telluride tellurosilicate (PbK2Te(SiTe4)) 216601-76-2 216601-77-3 216601-78-4 216601-79-5 216601-80-8 216601-81-9, Germanium potassium silicide telluride (GeK2Si2Te5) 216601-82-0, Aluminum lead magnesium telluride (Al2PbMgTe6) 216601-83-1, Lead magnesium tin telluride (PbMgSnTe5) 216601-84-2, Lead magnesium telluride tellurosilicate (PbMgTe(SiTe4)) 216601-85-3, Cadmium lead magnesium telluride (CdPbMgTe4) 216601-86-4, Bismuth lead magnesium telluride (Bi2PbMgTe8) 216601-87-5, Indium lead magnesium telluride (In2PbMgTe6) 216601-88-6, Lead magnesium zinc telluride (PbMgZnTe4) 216601-89-7, Gallium lead magnesium telluride (Ga2PbMgTe6) 216601-90-0, Germanium lead magnesium telluride (GePb2MgTe5) 216601-91-1, Cadmium tin telluride (CdSnTe3) 216601-92-2 216601-93-3, Cadmium lead telluride (CdPbTe3) 216601-94-4, Bismuth cadmium telluride (BiCdTe4) 216601-95-5, Cadmium germanium telluride (Cd2GeTe4) 216601-96-6, Bismuth strontium tin telluride (Bi2SrSnTe8) 216601-97-7 216601-98-8, Bismuth lead strontium telluride (Bi2PbSrTe8) 216601-99-9, Bismuth cadmium strontium telluride (Bi2CdSrTe7) 216602-00-5, Bismuth indium strontium telluride (BiInSrTe5) 216602-01-6, Bismuth strontium zinc telluride (Bi2SrZnTe7) 216602-02-7, Bismuth gallium strontium telluride (BiGaSrTe5) 216602-03-8, Aluminum barium indium telluride (AlBaInTe4) 216602-04-9, Barium indium tin telluride (BaIn2SnTe6) 216602-05-0, Barium indium telluride tellurosilicate (BaIn2Te2(SiTe4)) 216602-06-1, Barium indium lead telluride (BaIn2PbTe6) 216602-07-2, Barium cadmium indium telluride (BaCdIn2Te5) 216602-08-3, Barium bismuth indium telluride (BaBiInTe5) 216602-09-4, Barium indium zinc telluride (BaIn2ZnTe5) 216602-10-7, Barium gallium indium telluride (BaGaInTe4) 216602-11-8, Barium germanium indium telluride (BaGeIn2Te5) 216602-12-9, Tin zinc telluride (SnZnTe4) 216602-13-0 216602-14-1, Lead zinc telluride (PbZnTe3) 216602-15-2, Bismuth zinc telluride (Bi2ZnTe6) 216602-16-3, Germanium zinc telluride (GeZn2Te4) 216602-17-4, Aluminum

gallium magnesium telluride (AlGaMgTe4) 216602-18-5, Gallium magnesium tin telluride (Ga2MgSnTe6) 216602-19-6 216602-20-9, Cadmium gallium magnesium telluride (CdGa2MgTe5) 216602-21-0, Bismuth gallium magnesium telluride (BiGaMgTe5) 216602-22-1, Gallium indium magnesium telluride (GaInMgTe4) 216602-23-2, Gallium magnesium zinc telluride (Ga2MgZnTe5) 216602-24-3, Gallium germanium magnesium telluride (Ga2GeMgTe5) 216602-25-4, Aluminum calcium germanium telluride (Al2CaGeTe6) 216602-26-5, Calcium germanium tin telluride (CaGeSnTe5) 216602-27-6 216602-28-7, Calcium germanium lead telluride (CaGePbTe5) 216602-29-8, Cadmium calcium germanium telluride (CdCaGeTe4) 216602-30-1, Bismuth calcium germanium telluride (Bi2CaGeTe8) 216602-31-2, Calcium germanium indium telluride (CaGeIn2Te6) 216602-32-3, Calcium germanium zinc telluride (CaGeZnTe4) 216602-33-4, Calcium gallium germanium telluride (CaGa2GeTe6) 216602-34-5, Lithium magnesium tin oxide (Li0.1MgSnO3) 216602-35-6, Lithium magnesium tin oxide (Li0.5MgSnO3) 216602-36-7, Lithium magnesium tin oxide (LiMgSnO3) 216602-37-8, Lithium magnesium tin oxide (Li2MgSnO3) 216602-38-9, Lithium magnesium tin oxide (Li3MgSnO3) 216602-39-0, Lithium magnesium tin oxide (Li4MgSnO3) 216602-40-3, Lithium magnesium tin oxide (Li5MgSnO3) 216602-41-4, Lithium magnesium tin oxide (Li6MgSnO3) 216602-42-5, Lithium magnesium tin oxide (Li7MgSnO3) 216602-43-6, Lithium magnesium tin oxide (Li8MgSnO3) 216602-44-7, Lithium magnesium tin oxide (Li9MgSnO3) 216602-45-8, Lithium magnesium tin oxide (Li10MgSnO3) 216602-46-9, Lithium magnesium tin oxide (Li11MgSnO3) 216602-47-0, Lithium magnesium tin oxide (Li12MgSnO3) 216602-48-1, Antimony lithium tin oxide (SbLi0.1SnO3) 216602-49-2, Antimony lithium tin oxide (SbLi0.5SnO3) 216602-50-5, Barium lithium strontium tin oxide (BaLiSrSnO3) 216602-51-6, Barium lithium strontium tin oxide (BaLi2SrSnO3) 216602-52-7, Barium lithium strontium tin oxide (BaLi3SrSnO3) 216602-53-8, Barium lithium strontium tin oxide (BaLi4SrSnO3) 216602-54-9, Barium lithium strontium tin oxide (BaLi5SrSnO3) 216602-55-0, Barium lithium strontium tin oxide (BaLi6SrSnO3) 216602-56-1, Barium lithium strontium tin oxide (BaLi7SrSnO3) 216602-57-2, Barium lithium strontium tin oxide (BaLi8SrSnO3) 216602-58-3, Barium lithium strontium tin oxide (BaLi9SrSnO3) 216602-59-4, Barium lithium strontium tin oxide (BaLi10SrSnO3) 216602-60-7, Barium lithium strontium tin oxide (BaLi11SrSnO3) 216602-61-8, Barium lithium strontium tin oxide (BaLi12SrSnO3) 216602-62-9, Calcium lithium tin sulfide (CaLi0.1SnS3) 216602-63-0, Calcium lithium tin sulfide (CaLi0.5SnS3) 216602-64-1, Calcium lithium tin sulfide (CaLiSnS3) 216602-65-2, Calcium lithium tin sulfide (CaLi2SnS3) 216602-66-3, Calcium lithium tin sulfide (CaLi3SnS3) 216602-67-4, Calcium lithium tin sulfide (CaLi4SnS3) 216602-68-5, Calcium lithium tin sulfide (CaLi5SnS3) 216602-69-6, Calcium lithium tin sulfide (CaLi6SnS3) 216602-70-9, Calcium lithium tin sulfide (CaLi7SnS3) 216602-71-0, Calcium lithium tin sulfide (CaLi8SnS3) 216602-72-1, Calcium lithium tin sulfide (CaLi9SnS3) 216602-73-2, Calcium lithium tin sulfide (CaLi10SnS3) 216602-74-3, Calcium lithium tin sulfide (CaLi11SnS3) 216602-75-4, Calcium lithium tin sulfide (CaLi12SnS3) 216602-76-5, Lithium strontium tin selenide (Li0.1SrSnSe3) 216602-77-6, Lithium strontium tin selenide (Li0.5SrSnSe3) 216602-78-7, Lithium strontium tin selenide (LiSrSnSe3) 216602-79-8, Calcium lithium tin selenide (CaLi2SnSe3) 216602-80-1, Calcium lithium tin selenide (CaLi3SnSe3) 216602-81-2, Calcium lithium tin selenide (CaLi4SnSe3) 216602-82-3, Calcium lithium tin selenide (CaLi5SnSe3) 216602-83-4, Calcium lithium tin selenide (CaLi6SnSe3) 216602-84-5, Calcium lithium tin selenide (CaLi7SnSe3) 216602-85-6, Calcium lithium tin selenide (CaLi8SnSe3) 216602-86-7, Calcium lithium tin selenide (CaLi9SnSe3) 216602-87-8, Calcium lithium tin selenide (CaLi10SnSe3) 216602-88-9, Calcium lithium tin selenide (CaLi11SnSe3) 216602-89-0, Calcium lithium

tin selenide (CaLi12SnSe3) 216602-90-3, Barium lithium tin telluride (BaLi0.1SnTe3) 216602-91-4, Barium lithium tin telluride (BaLi0.5SnTe3) 216602-92-5, Barium lithium tin telluride (BaLiSnTe3) 216602-93-6, Barium lithium tin telluride (BaLi2SnTe3) 216602-94-7, Barium lithium tin telluride (BaLi3SnTe3) 216602-95-8, Barium lithium tin telluride (BaLi4SnTe3) 216602-96-9, Barium lithium tin telluride (BaLi5SnTe3) 216602-97-0, Barium lithium tin telluride (BaLi6SnTe3) 216602-98-1, Barium lithium tin telluride (BaLi7SnTe3) 216602-99-2, Barium lithium tin telluride (BaLi8SnTe3) 216603-00-8, Barium lithium tin telluride (BaLi9SnTe3) 216603-01-9, Barium lithium tin telluride (BaLi10SnTe3) 216603-02-0, Barium lithium tin telluride (BaLi11SnTe3) 216603-03-1, Barium lithium tin telluride (BaLi12SnTe3)
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(**anode** in high-performance nonaq.-**electrolyte batteries**)

IT 130811-82-4, Cobalt lithium manganese oxide (Co0.2Li Mn1.8O4)
RL: DEV (Device component use); USES (Uses)
(**cathode** in high-performance nonaq.-**electrolyte batteries**)

IT **12232-99-4**, Bismuth sodium oxide (BiNaO3) **12589-75-2** **203737-11-5**, Bismuth rubidium oxide (BiRbO3)
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(**anode** in high-performance nonaq.-**electrolyte batteries**)

RN 12232-99-4 HCAPLUS
CN Bismuth sodium oxide (BiNaO3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3	17778-80-2
Bi	1	7440-69-9
Na	1	7440-23-5

RN 12589-75-2 HCAPLUS
CN Bismuth potassium oxide (BiKO3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3	17778-80-2
Bi	1	7440-69-9
K	1	7440-09-7

RN 203737-11-5 HCAPLUS
CN Bismuth rubidium oxide (BiRbO3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3	17778-80-2
Bi	1	7440-69-9
Rb	1	7440-17-7

L75 ANSWER 10 OF 21 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:146668 HCAPLUS
DN 128:182576
TI **Battery** and gelled **anode** and coated current collector for this **battery**

IN West, Jack Thomas; Bonacker, Franz Frederick; Messing, Terry Glen
PA Rayovac Corp., USA
SO U.S., 30 pp.
CODEN: USXXAM
DT **Patent**
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5721068	A	19980224	US 1996-612038	19960307 <--
PRAI US 1996-612038		19960307 <--		

AB A **battery** having **anode** current collector coated with a Bi-Sn alloy maintains acceptable performance level and is protected from failure due to vibration. Improved environmental compatibility is achieved by coupling the coated current collector with an **anode** that contains an alloy powder of Bi and Zn that is substantially free of Hg, Cd, Ca, In, Ga, Tl, Pb, and Sn. The **battery** performance can also be improved by providing a soluble Bi additive in the **battery electrolyte.**

IC ICM **H01M0006-22**
ICS **H01M0004-42**
INCL 429190000
CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)
ST **battery** gelled **anode** current collector coating; bismuth tin alloy coating current collector
IT **Battery anodes**
(gelled powdered bismuth-zinc alloy with bismuth tin alloy-coated tin-plated brass current collector)
IT 12673-36-8 37296-36-9 39381-51-6 39471-74-4 58847-03-3 67512-64-5, Bismuth 25, tin 75 110478-68-7
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(**battery anode** tin-plated brass current collector coated with)
IT 58561-43-6
RL: DEV (Device component use); USES (Uses)
(gelled **battery anode** with bismuth tin alloy-coated tin-plated brass current collector)
IT **12232-99-4**, Sodium bismuthate
RL: MOA (Modifier or additive use); USES (Uses)
(high-performance zinc **battery** with **electrolyte** containing)
IT **12232-99-4**, Sodium bismuthate
RL: MOA (Modifier or additive use); USES (Uses)
(high-performance zinc **battery** with **electrolyte** containing)
RN 12232-99-4 HCAPLUS
CN Bismuth sodium oxide (BiNaO3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3	17778-80-2
Bi	1	7440-69-9
Na	1	7440-23-5

RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File

Anderson	1976		US 3954505	HCAPLUS
Boswell	1960		US 2959631	HCAPLUS
Chalkpoyk	1986		US 4585716	HCAPLUS
Glaeser	1993		US 5240793	HCAPLUS
Hunter	1992		US 5112705	HCAPLUS
Inoue	1995		US 5445908	HCAPLUS
Jose	1991		US 4994333	
Kagawa	1989		US 4812374	HCAPLUS
Mansfield	1994		US 5279905	HCAPLUS
Nagamine	1985		US 4500614	HCAPLUS
Oswin	1971		US 3623911	
Shinoda	1994		US 5348816	HCAPLUS
Sugihara	1995		US 5384214	HCAPLUS
Tada	1992		US 5139900	HCAPLUS
Tada	1993		US 5209995	HCAPLUS
Toyoguchi	1989		US 4851309	HCAPLUS
Uemura	1992		US 5108494	HCAPLUS
Uemura	1994		US 5312476	HCAPLUS
Watanabe	1996		US 5541021	
Wilson	1991		US 5039576	HCAPLUS
Yoshizawa	1992		US 5128222	HCAPLUS
Yoshizawa	1992		US 5168018	HCAPLUS
Yoshizawa	1994		US 5308374	HCAPLUS

L75 ANSWER 11 OF 21 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:68386 HCAPLUS
DN 128:169830
TI **Batteries** with carbon **anodes** capable of plural and reversible charging-discharging
IN Igawa, Kyoko; Komatsu, Yoshimi; Tsuruoka, Shigeo; Yamauchi, Hisako; Douzono, Toshinori; Muranaka, Kiyoshi; Yoshikawa, Masanori
PA Hitachi, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT **Patent**
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 10021913	A	19980123	JP 1996-176214	19960705 <--
PRAI JP 1996-176214		19960705 <--		

AB The title **batteries** comprise Li-intercalating C **anodes** coated with oxides of Li, Ge, Sn, Pb, Sb, Bi, B, Al, Si, and/or In. The **batteries** have high volume energy d. and long cycle life.
IC ICM **H01M0004-58**
ICS **H01M0004-02; H01M0010-40**
CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)
ST metal oxide coated carbon **anode**; lithium **battery** carbon **anode** coating
IT **Secondary batteries**
(lithium; metal oxide-coated carbon **anodes** for **batteries** for energy d. and cycle life)
IT **Battery anodes**
(metal oxide-coated carbon **anodes** for **batteries** for energy d. and cycle life)
IT 1303-86-2, Boron oxide, uses 1309-64-4, Antimony oxide (Sb2O3), uses 1310-53-8, Germania, uses 1312-43-2, Indium oxide (In2O3) 1317-36-8, Lead oxide (PbO), uses 1344-28-1, Alumina, uses 7440-44-0, Carbon, uses 7782-42-5, Graphite, uses **11086-13-8**, Bismuth Lithium

oxide (LiBiO2) 15773-66-7 18282-10-5, Tin dioxide 21651-19-4, Tin monoxide
RL: DEV (Device component use); USES (Uses)
(metal oxide-coated carbon **anodes** for **batteries** for energy d. and cycle life)
IT **11086-13-8**, Bismuth Lithium oxide (LiBiO2)
RL: DEV (Device component use); USES (Uses)
(metal oxide-coated carbon **anodes** for **batteries** for energy d. and cycle life)
RN 11086-13-8 HCAPLUS
CN Bismuth lithium oxide (BiLiO2) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	2	17778-80-2
Bi	1	7440-69-9
Li	1	7439-93-2

L75 ANSWER 12 OF 21 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1997:442845 HCAPLUS
DN 127:68587
TI Lithium secondary **batteries** comprising nonaqueous **electrolytes** with prevention of lithium dendritic precipitation at **anode**
IN Shimamura, Harunari; Okamura, Kazuhiro; Nitta, Yoshiaki
PA Matsushita Electric Industrial Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DT **Patent**
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 09161849	A	19970620	JP 1995-325449	19951214 <--
PRAI JP 1995-325449		19951214 <--		

AB The **batteries** comprise LixBiO2 ($0 \leq x \leq 2.0$) in **anodes**. The **batteries** show high discharging capacity, since the compound can be filled in the **anodes** at high d.
IC ICM **H01M0010-40**
ICS **H01M0004-02**; **H01M0004-58**
CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)
ST **battery anode** lithium bismuth oxide; nonaq **electrolyte** lithium **battery anode**
IT **Battery anodes**
(secondary; Li secondary **batteries** using lithium bismuth oxide **anodes**)
IT **191538-77-9**, Bismuth lithium oxide (BiLi0-2O2)
RL: DEV (Device component use); USES (Uses)
(**anodes**; Li secondary **batteries** using lithium bismuth oxide **anodes**)
IT **191538-77-9**, Bismuth lithium oxide (BiLi0-2O2)
RL: DEV (Device component use); USES (Uses)
(**anodes**; Li secondary **batteries** using lithium bismuth oxide **anodes**)
RN 191538-77-9 HCAPLUS
CN Bismuth lithium oxide (BiLi0-2O2) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	2	17778-80-2
Bi	1	7440-69-9
Li	0 - 2	7439-93-2

L75 ANSWER 13 OF 21 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1996:89305 HCAPLUS
DN 124:122117
TI Secondary nonaqueous **batteries** with improved lithium intercalating **anodes**
IN Tomyama, Hideki
PA Fuji Photo Film Co Ltd, Japan
SO Jpn. Kokai Tokkyo Koho, 18 pp.
CODEN: JKXXAF
DT **Patent**
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 07307153	A	19951121	JP 1995-77087	19950309 <--
PRAI	JP 1995-77087	A	19950309 <--		
	JP 1994-68146		19940314 <--		

AB The **batteries** use **anodes** containing a Li intercalating active mass selected from oxides of Group IVB metals, Group V metals, In and Zn and a polymer having decomposition temperature ≥300°. Another type of the **anodes** contain the same active mass and use 5-200 μm thick Cu, Ni, Ti or their alloys as current collector. The polymer is preferably a fluoropolymer.
IC ICM **H01M0004-02**
ICS **H01M0004-58; H01M0004-62; H01M0010-40**
CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)
ST **battery** lithium intercalating oxide **anode**; fluoropolymer binder lithium intercalating oxide **anode**
IT Polymers, uses
RL: DEV (Device component use); USES (Uses)
(high decomposition temperature polymer binders for lithium intercalating oxide **anodes** for **batteries**)
IT **Anodes**
(**battery**, active mass and binders and current collectors for lithium intercalating oxide **anodes** for **batteries**)
IT Fluoropolymers
RL: DEV (Device component use); USES (Uses)
(fluoroalkoxy group-containing, binders for lithium intercalating oxide **anodes** for **batteries**)
IT 9002-83-9, PCTFE 9002-84-0, PTFE 9010-75-7, Chlorotrifluoroethylene-vinylidene fluoride copolymer 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer 24937-79-9, Pvdf 25038-71-5, Ethylene-tetrafluoroethylene copolymer 25067-11-2, FEP 25101-45-5 25190-89-0 27029-05-6, Propylene-tetrafluoroethylene copolymer 57392-41-3 101680-75-5
RL: DEV (Device component use); USES (Uses)
(binders for lithium intercalating oxide **anodes** for **batteries**)
IT 7440-02-0, Nickel, uses 7440-32-6, Titanium, uses 7440-50-8, Copper, uses 11109-50-5, Sus304 11109-52-7, Sus430 11134-23-9, Sus316l

12611-90-4 12641-39-3 12645-75-9 12735-68-1 62962-96-3, Molybdenum 0.3, nickel 0.8, titanium 99 100438-63-9, Tantalum 5, titanium 95 161918-58-7 173213-44-0, Nickel 100, palladium 0.2
RL: DEV (Device component use); USES (Uses)
(current collectors for lithium intercalating oxide **anodes** for **batteries**)

IT 1304-76-3, Bismuth oxide (bi2O3), uses 1309-60-0, Lead dioxide 1309-64-4, Antimony oxide (Sb2O3), uses 1310-53-8, Germanium dioxide, uses 1314-27-8, Lead oxide (Pb2O3) 1314-41-6, Lead oxide (Pb3O4) 1317-36-8, Lead monoxide, uses 1332-81-6, Antimony oxide (Sb2O4) 12055-92-4, Indium lithium oxide (InLi3O3) 12188-25-9, Lithium tin oxide (Li2SnO3) 12315-28-5, Lithium germanium oxide (Li2GeO3) 12344-15-9, Lithium tin oxide (Li8SnO6) 13453-84-4, Lithium silicate (Li4SiO4) 15593-40-5, Antimony lithium oxide (SbLi3O4) 15773-66-7 18282-10-5, Tin dioxide 20619-16-3, Germanium monoxide 21651-19-4, Tin monoxide 37356-04-0, Lithium zinc oxide (Li2ZnO2) 53570-15-3, Lead lithium oxide (PbLiO3) 55128-56-8, Lithium tin oxide (Li6SnO5) 167994-75-4, Lithium tin oxide (Li0.1SnO2.05) **167994-88-9**, Bismuth lithium oxide (BiLi3O4) 170232-57-2, Lithium tin oxide (Li0.5SnO2.25) 170232-58-3, Lithium tin oxide (Li4SnO4) 170232-60-7, Lithium tin oxide (Li0.1SnO1.05) 170232-61-8, Lithium tin oxide (Li0.5SnO1.25) 170232-62-9, Lithium tin oxide (LiSnO2.5) 170232-64-1, Lithium tin oxide (Li8SnO5) 172972-03-1, Lithium tin oxide (Li2SnO2) 173213-40-6, Lithium tin zinc oxide (Li2Sn2ZnO3) 173213-42-8, Aluminum tin oxide phosphate silicide (Al0.2SnO0.2(PO4)0.2Si0.8) 173213-43-9, Lithium oxide silicide (LiOSi)
RL: DEV (Device component use); USES (Uses)
(lithium intercalating oxide **anodes** for **batteries**)

IT **167994-88-9**, Bismuth lithium oxide (BiLi3O4)
RL: DEV (Device component use); USES (Uses)
(lithium intercalating oxide **anodes** for **batteries**)

RN 167994-88-9 HCAPLUS
CN Bismuth lithium oxide (BiLi3O4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	4	17778-80-2
Bi	1	7440-69-9
Li	3	7439-93-2

L75 ANSWER 14 OF 21 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1996:76487 HCAPLUS
DN 124:122056
TI Lithium secondary **battery** having improved charge-discharge characteristic and safety
IN Kubota, Tadahiko; Tanaka, Mitsutoshi
PA Fuji Photo Film Co Ltd, Japan
SO Jpn. Kokai Tokkyo Koho, 19 pp.
CODEN: JKXXAF
DT **Patent**
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 07263028	A	19951013	JP 1994-55614	19940325 <--
	US 5654114	A	19970805	US 1995-409045	19950323 <--
PRAI	JP 1994-55614	A	19940325 <--		

AB In a Li secondary **battery**, a neg. **electrode** active

mass is an oxide containing ≥1 of a Group IVA element, a Group VA element, In, Zn, and Mg, and a pos. **electrode** active mass is LixCoy1My2Oz, where M is Ni, V, Fe, Mn, Ti, or Cu; y1 = 0.75-1.0; yr2 = 0-0.25; yr1 + y2 = 1; x = 0.7-1.2, and z = 1.5-3.0. In the pos. **electrode** active mass, the average diam of particles D is 3<D≤9.0 μm, and the volume ratio of particles having a diameter of 3-150 μm is ≥75%. The preferred pos. **electrode** active mass contains Sn oxides. The **battery** has improved charge-discharge characteristic and safety.

IC ICM **H01M0010-40**
ICS **H01M0002-16; H01M0004-02; H01M0004-58**

CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)

ST lithium secondary **battery** safety

IT Safety
(lithium secondary **battery** having improved charge-discharge characteristic and safety)

IT **Batteries, secondary**
(lithium, having improved charge-discharge characteristic and safety)

IT 1304-76-3, Bismuth oxide (Bi2O3), uses 1309-60-0, Lead oxide (PbO2) 1309-64-4, Antimony oxide (Sb2O3), uses 1310-53-8, Germanium oxide (GeO2), uses 1314-41-6, Lead oxide (Pb3O4) 1317-36-8, Lead oxide (PbO), uses 1332-81-6, Antimony oxide (Sb2O4) 12055-92-4, Indium lithium oxide (InLi3O3) 12188-25-9, Lithium tin oxide (Li2SnO3) 12315-28-5, Germanium Lithium oxide (GeLi2O3) 12344-15-9, Lithium tin oxide (Li8SnO6) 12399-16-5, Lithium tin zinc oxide (Li2Sn2ZnO6) 15593-40-5, Antimony lithium oxide (SbLi3O4) 15773-66-7, Tin silicate (SnSiO3) 18282-10-5, Tin oxide (SnO2) 20619-16-3, Germanium oxide (GeO) 21651-19-4, Tin oxide (SnO) 37356-04-0, Lithium zinc oxide (Li2ZnO2) 53570-15-3 55128-56-8, Lithium tin oxide (Li6SnO5) 167994-75-4, Lithium tin oxide (Li0.1SnO2.05) **167994-88-9**, Bismuth lithium oxide (BiLi3O4) 170232-57-2, Lithium tin oxide (Li0.5SnO2.25) 170232-58-3, Lithium tin oxide (Li4SnO4) 170232-60-7, Lithium tin oxide (Li0.1SnO1.05) 170232-61-8, Lithium tin oxide (Li0.5SnO1.25) 170232-62-9, Lithium tin oxide (LiSnO2.5) 170232-64-1, Lithium tin oxide (Li8SnO5) 172972-03-1, Lithium tin oxide (Li2SnO2)
RL: DEV (Device component use); USES (Uses)
(neg. **electrode** active mass, in lithium secondary **battery** having improved charge-discharge characteristic and safety)

IT 12190-79-3, Cobalt lithium oxide (LiCoO2) 173049-91-7, Cobalt lithium oxide (CoLi0.97O1.7-2.3) 173049-92-8, Cobalt lithium nickel oxide (Co0.9LiNi0.1O1.7-2.3) 173049-93-9, Cobalt lithium vanadium oxide (Co0.95LiV0.05O1.7-2.3) 173049-94-0, Cobalt lithium vanadium oxide (Co0.98LiV0.02O1.7-2.3) 173049-95-1, Cobalt iron lithium oxide (Co0.75Fe0.25LiO1.7-2.3) 173049-96-2, Cobalt lithium manganese oxide (Co0.75LiMn0.25O1.7-2.3) 173049-97-3, Cobalt lithium manganese oxide (Co0.85LiMn0.15O1.7-2.3) 173049-98-4, Cobalt lithium manganese oxide (Co0.95LiMn0.05O1.7-2.3) 173049-99-5, Cobalt lithium manganese oxide (Co0.97Li1.02Mn0.03O1.7-2.3) 173050-00-5, Cobalt lithium titanium oxide (Co0.97LiTi0.03O1.7-2.3) 173050-01-6, Cobalt copper lithium oxide (Co0.97Cu0.03LiO1.7-2.3)
RL: DEV (Device component use); USES (Uses)
(pos. **electrode** active mass, in lithium secondary **battery** having improved charge-discharge characteristic and safety)

IT **167994-88-9**, Bismuth lithium oxide (BiLi3O4)
RL: DEV (Device component use); USES (Uses)
(neg. **electrode** active mass, in lithium secondary **battery** having improved charge-discharge characteristic and

safety)
RN 167994-88-9 HCAPLUS
CN Bismuth lithium oxide (BiLi3O4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	4	17778-80-2
Bi	1	7440-69-9
Li	3	7439-93-2

L75 ANSWER 15 OF 21 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1995:909561 HCAPLUS
DN 123:318751
TI Secondary nonaqueous **batteries** with lithium containing multiple oxide **anodes**
IN Mishima, Masayuki; Myaki, Yukio; Kubota, Tadahiko; Aida, Kensuke; Kagawa, Okimasa; Myasaka, Tsutomu
PA Fuji Photo Film Co Ltd, Japan
SO Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DT **Patent**
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 07201318	A	19950804	JP 1993-338532	19931228 <--
PRAI JP 1993-338532		19931228 <--		

AB The **batteries** use **anodes** composed of Li containing multiple oxide LipMqOr, where M = Si, Ge, Sn, Pb, Bi, Sb, Zn, In, and/or Mg, p = 0.1-8, q = 1-7, and r = 1-20.
IC ICM **H01M0004-02**
ICS **H01M0004-58; H01M0010-40**
CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)
ST **battery** lithium tin oxide **anode**; metal lithium oxide **battery anode**
IT **Anodes**
(**battery**, lithium containing multiple oxide **anodes** for **batteries**)
IT 12055-92-4P, Indium lithium oxide (InLi3O3) 12188-25-9P, Lithium tin oxide (Li2SnO3) 12315-28-5P, Germanium lithium oxide (GeLi2O3) 12344-15-9P, Lithium tin oxide (Li8SnO6) 12399-15-4P 12399-16-5P, Lithium tin zinc oxide (Li2Sn2ZnO6) 15593-40-5P, Antimony lithium oxide (SbLi3O4) 37356-04-0P, Lithium zinc oxide (Li2ZnO2) 55128-56-8P 167994-75-4P, Lithium tin oxide (Li0.1SnO2.05) **167994-88-9P**, Bismuth lithium oxide (BiLi3O4) 170232-55-0P, Lead lithium oxide (PbLi2O3) 170232-57-2P, Lithium tin oxide (Li0.5SnO2.25) 170232-58-3P, Lithium tin oxide (Li4SnO4) 170232-60-7P, Lithium tin oxide (Li0.1SnO1.05) 170232-61-8P, Lithium tin oxide (Li0.5SnO1.25) 170232-62-9P, Lithium tin oxide (LiSnO2.5) 170232-63-0P, Lithium tin oxide (Li6SnO4) 170232-64-1P, Lithium tin oxide (Li8SnO5)
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(lithium containing multiple oxide **anodes** for **batteries**)
IT **167994-88-9P**, Bismuth lithium oxide (BiLi3O4)
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(lithium containing multiple oxide **anodes** for **batteries**
)
RN 167994-88-9 HCAPLUS
CN Bismuth lithium oxide (BiLi3O4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	4	17778-80-2
Bi	1	7440-69-9
Li	3	7439-93-2

L75 ANSWER 16 OF 21 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1995:804336 HCAPLUS
DN 123:204334
TI Nonaqueous secondary **battery** containing lithium intercalated mixed tin oxide **anodes** for suppressed lithium dendrite growth and improved characteristics
IN Idota, Yoshio; Mishima, Masayuki; Miyaki, Yukio; Kubota, Tadahiko; Miyasaka, Tsutomu
PA Fuji Photo Film Co., Ltd., Japan
SO Eur. Pat. Appl., 48 pp
CODEN: EPXXDW
DT **Patent**
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 651450	A1	19950503	EP 1994-116643	19941021 <--
	EP 651450	B1	19990107		
	R: DE, FR, GB, IT				
	JP 07122274	A	19950512	JP 1993-264995	19931022 <--
	JP 07220721	A	19950818	JP 1994-7760	19940127 <--
	JP 3498345	B2	20040216		
	JP 07235293	A	19950905	JP 1994-26745	19940224 <--
	JP 07249409	A	19950926	JP 1994-66422	19940311 <--
	JP 07288123	A	19951031	JP 1994-220858	19940824 <--
	JP 3498380	B2	20040216		
	US 5618640	A	19970408	US 1994-326365	19941020 <--
	CA 2134052	A1	19950423	CA 1994-2134052	19941021 <--
	EP 814522	A2	19971229	EP 1997-110038	19941021 <--
	EP 814522	A3	19990512		
	EP 814522	B1	20060329		
	R: DE, FR, GB, IT				
	EP 814523	A2	19971229	EP 1997-110039	19941021 <--
	EP 814523	A3	19990512		
	EP 814523	B1	20060329		
	R: DE, FR, GB, IT				
	US 5780181	A	19980714	US 1996-756628	19961126 <--
	US 5965293	A	19991012	US 1998-33687	19980303 <--
	JP 2004087499	A	20040318	JP 2003-319511	20030911 <--
	JP 3729193	B2	20051221		
PRAI	JP 1993-264995	A	19931022 <--		
	JP 1994-7760	A	19940127 <--		
	JP 1994-26745	A	19940224 <--		
	JP 1994-30206	A	19940228 <--		
	JP 1994-66422	A	19940311 <--		
	US 1994-326365	A3	19941020 <--		
	EP 1994-116643	A3	19941021 <--		

US 1996-756628 A3 19961126 <--

AB In the nonaq. secondary **battery** comprising a **cathode** active material, **anode** active material, and Li salt, the **anode** active material contains (1) a compound capable of intercalating and deintercalating Li comprising an atom of Groups IIIB, IVB (especially Sn) or VB, (2) an amorphous compound containing ≥2 atoms selected from Groups IIIB, IVB, and VB, (3) a compound capable of intercalating and deintercalating Li containing ≥1 of atoms of Groups IIIB, IVB, and VB, and F, or (4) a compound of the metal of Groups IIIB, IVB or VB, Zn, or Mg which is capable of intercalating and deintercalating Li. The nonaq. secondary **battery** exhibits improved charge and discharge characteristics and suppressed Li dendrite growth.

IC ICM **H01M0004-48**
ICS **H01M0004-58**

CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)

ST tin mixed oxide lithium **battery anode**

IT **Anodes**
(**battery**, nonaq. secondary **battery** containing lithium intercalated mixed tin oxide **anodes**)

IT 10102-24-6, Lithium silicate (li2sio3) 12031-65-1, Lithium nickel oxide (linio2) 12031-92-4, Lithium manganese oxide (Li4Mn5O12) 12055-92-4, Indium lithium oxide (InLi3O3) 12057-17-9, Lithium manganese oxide (LiMn2O4) 12190-79-3, Lithium cobalt oxide (licoo2) 12315-28-5, Lithium germanium oxide (li2geo3) 12344-15-9, Lithium tin oxide (Li8SnO6) 12399-15-4, Lithium magnesium tin oxide (Li2MgSn2O6) 12399-16-5, Lithium tin zinc oxide (li2sn2zno6) 15593-40-5, Antimony lithium oxide (SbLi3O4) 37356-04-0, Lithium zinc oxide (li2zno2) 55128-56-8, Lithium tin oxide (Li6SnO5) 101920-93-8, Cobalt lithium nickel oxide (Co0.5LiNi0.5O2) 127575-11-5, Lithium manganese oxide (li2mn4o9) 155827-08-0, Cobalt lithium vanadium oxide (Co0.95LiV0.05O2) 156912-71-9, Lithium manganese oxide (Li0.89Mn1.78O4) 167163-14-6, Lithium manganese oxide (Li2Mn5O11) 167163-15-7, Lithium manganese oxide (Li0.5Mn1.88O4) 167163-16-8, Lithium manganese oxide (Li0.46Mn1.89O4) 167994-75-4, Lithium tin oxide (Li0.1SnO2.05) 167994-77-6, Cobalt germanium lithium zirconium oxide (CoGe0.02LiZr0.02O2) 167994-78-7, Cobalt germanium lithium oxide (CoGe0.08LiO2) 167994-79-8, Cobalt germanium lithium oxide (CoGe0.06LiO2) 167994-80-1, Cobalt lithium zirconium oxide (CoLiZr0.06O2) 167994-81-2, Cobalt lithium zirconium oxide (CoLiZr0.08O2) 167994-82-3, Cobalt lithium titanium oxide (CoLiTi0.08O2) 167994-83-4, Cobalt lithium titanium oxide (CoLiTi0.03O2) 167994-84-5, Cobalt germanium lithium oxide (CoGe0.03LiO2) 167994-85-6, Cobalt lithium zirconium oxide (CoLiZr0.02O2) **167994-88-9**, Bismuth lithium oxide (BiLi3O4)
RL: DEV (Device component use); USES (Uses)
(**cathodes**; nonaq. secondary **battery** containing lithium intercalated mixed tin oxide **anodes**)

IT 1304-76-3, Bismuth oxide (bi2o3), uses 1309-60-0, Lead oxide (pbo2) 1309-64-4, Antimony oxide (sb2o3), uses 1310-53-8, Germanium oxide (geo2), uses 1314-27-8, Lead oxide (pb2o3) 1314-41-6, Lead oxide (pb3o4) 1317-36-8, Lead oxide (pbo), uses 1332-81-6, Antimony oxide (sb2o4) 10099-76-0, Lead silicon oxide (pbsio3) 12025-27-3, Lead germanium oxide (pbgeo3) 12036-31-6, Lead tin oxide (pbsno3) 12188-25-9, Lithium tin oxide (Li2SnO3) 15773-66-7, Tin silicate (snsio3) 18282-10-5, Tin oxide (sno2) 20619-16-3, Germanium oxide (geo) 21651-19-4, Tin oxide (sno) 134201-22-2 167994-05-0, Germanium tin oxide silicate (Ge0.1SnO0.3(SiO3)0.9) 167994-06-1, Lead tin oxide silicate (Pb0.1SnO0.3(SiO3)0.9) 167994-07-2, Germanium tin oxide silicate (Ge0.5SnO(SiO4)0.5) 167994-08-3, Germanium lead tin oxide (Ge0.9Pb0.1SnO3) 167994-09-4, Tin oxide silicate (SnO0.3(SiO3)0.7)

167994-10-7, Tin oxide silicate (SnO0.4(Si2O5)0.6) 167994-11-8, Tin oxide silicate (SnO0.25(Si2O5)0.75) 167994-12-9, Lead tin oxide silicate (Pb0.5SnO(SiO4)0.5) 167994-13-0, Tin oxide silicate (SnO1.4(SiO4)0.3) 167994-14-1, Germanium tin oxide (Ge0.1SnO2.2) 167994-15-2, Germanium tin oxide (Ge0.3SnO2.6) 167994-16-3, Lead tin oxide (Pb0.1SnO2.2) 167994-17-4, Lead tin oxide (Pb0.1SnO2.6) 167994-18-5, Germanium tin oxide silicate (Ge0.1SnO2(SiO4)0.1) 167994-19-6, Lead tin oxide silicate (Pb0.1SnO2(SiO4)0.1) 167994-20-9, Tin oxide silicate (SnO1.62(SiO4)0.1) 167994-21-0, Tin oxide silicate (SnO0.5(SiO3)1.5) 167994-22-1, Lead oxide silicate (PbO1.8(SiO4)0.1) 167994-23-2, Germanium lead oxide (Ge0.3PbO2.6) 167994-24-3, Germanium oxide silicate (GeO1.8(SiO4)0.1) 167994-25-4, Germanium oxide silicate (GeO1.4(SiO4)0.3) 167994-26-5, Tin oxide silicate (SnO0.8(SiO4)0.1) 167994-27-6, Tin oxide silicate (SnO0.98(SiO4)0.01) 167994-28-7, Germanium tin oxide (Ge0.1SnO1.2) 167994-29-8, Lead tin oxide (Pb0.1SnO1.2) 167994-30-1, Lead oxide silicate (PbO0.9(SiO4)0.05) 167994-31-2, Germanium lead oxide (Ge0.1PbO1.1) 167994-33-4, Tin oxide phosphate silicate (SnO0.2(PO4)0.1(SiO3)0.8) 167994-34-5, Germanium tin oxide silicate (Ge0.6SnO(SiO4)0.5) 167994-35-6, Tin oxide silicate (SnO0.4(Si2O5)0.4) 167994-36-7, Tin metaphosphate oxide (Sn(PO3)O0.5) 167994-37-8, Tin borate oxide (Sn(BO2)O0.5) 167994-38-9, Tin oxide silicate (SnO0.1(SiO3)0.9) 167994-39-0, Tin oxide silicate (SnO1.6(SiO4)0.3) 167994-40-3, Lead tin oxide (Pb0.1SnO2.8) 167994-41-4, Tin oxide silicate (SnO1.98(SiO4)0.01) 167994-42-5, Tin oxide silicate (SnO1.1(SiO3)1.3) 167994-43-6, Germanium oxide silicate (GeO1.8(SiO4)0.2) 167994-44-7, Tin oxide phosphate (SnO1.55(PO4)0.3) 167994-45-8, Tin borate oxide (Sn(BO3)0.3O1.55) 167994-46-9, Tin metaphosphate oxide silicate (Sn(PO3)0.1O0.05(SiO3)0.9) 167994-47-0, Tin oxide phosphide silicate (SnO0.35P0.9(SiO4)0.7) 167994-48-1, Tin phosphate silicate (Sn(PO4)0.5(Si2O5)0.25) 167994-49-2, Tin metaphosphate oxide silicate (Sn(PO3)0.8O0.2(SiO4)0.2) 167994-50-5, Antimony tin oxide phosphate silicate (Sb0.1SnO0.2(PO4)0.1(SiO3)0.8) 167994-51-6, Germanium tin oxide phosphate silicate (Ge0.1SnO0.2(PO4)0.2(SiO3)0.7) 167994-52-7, Germanium tin oxide phosphate silicate (Ge0.4SnO0.45(PO4)0.1(SiO4)0.6) 167994-53-8, Germanium tin oxide phosphate silicate (Ge0.1SnO0.05(PO4)0.7(Si2O5)0.1) 167994-54-9, Aluminum tin oxide phosphate silicate (Al0.1SnO0.2(PO4)0.1(SiO3)0.8) 167994-55-0, Aluminum tin oxide phosphate silicate (Al0.1SnO0.05(PO4)0.2(SiO3)0.8) 167994-56-1, Aluminum tin oxide phosphate silicate (Al0.3SnO0.1(PO4)0.1(SiO4)0.6) 167994-57-2, Aluminum tin oxide phosphate silicate (Al0.1SnO0.1(PO4)0.3(SiO3)0.6) 167994-58-3 167994-59-4, Tin metaphosphate oxide silicate (Sn(PO3)0.8O0.1(SiO3)0.2) 167994-60-7, Tin metaphosphate oxide silicate (Sn(PO3)0.4O0.1(SiO3)0.6) 167994-61-8, Aluminum tin oxide phosphate silicate (Al0.2SnO0.2(PO4)0.2(SiO3)0.8) 167994-62-9, Aluminum tin oxide phosphate silicate (Al0.2SnO0.1(PO4)0.3(SiO3)0.7) 167994-63-0, Aluminum tin phosphate silicate (Al0.2Sn(PO4)0.6(SiO3)0.4) 167994-64-1, Aluminum tin metaphosphate oxide (Al0.1Sn(PO3)O0.65) 167994-65-2, Tin fluoride oxide (SnF0.2O0.9) 167994-66-3, Tin fluoride oxide silicate (SnF0.4O0.3(Si2O5)0.5) 167994-67-4, Tin fluoride silicate (SnF(Si2O5)0.5) 167994-68-5, Germanium tin fluoride silicate (Ge0.1SnF0.4(SiO3)) 167994-69-6, Aluminum tin fluoride silicate (Al0.1SnF0.4(SiO3)) 167994-70-9, Tin titanium fluoride silicate (SnTi0.1F0.4(SiO3)) 167994-71-0, Tin zinc fluoride silicate (SnZn0.1F0.4(SiO3)) 167994-72-1, Iron tin fluoride silicate (Fe0.1SnF0.4(SiO3)) 167994-73-2, Germanium tin fluoride oxide (GeSnF0.4O2.8) 167994-74-3, Lead tin fluoride oxide (PbSnF0.4O2.8) 167994-86-7, Germanium tin oxide (GeSnO3) 167994-87-8
RL: DEV (Device component use); USES (Uses)
(lithium-intercalated, **anodes**; nonaq. secondary

battery containing lithium intercalated mixed tin oxide **anodes**)

IT 7439-93-2, Lithium, uses
RL: DEV (Device component use); USES (Uses)
(mixed tin oxides intercalated with, **anodes**; nonaq. secondary **battery** containing lithium intercalated mixed tin oxide **anodes**)

IT **167994-88-9**, Bismuth lithium oxide (BiLi3O4)
RL: DEV (Device component use); USES (Uses)
(**cathodes**; nonaq. secondary **battery** containing lithium intercalated mixed tin oxide **anodes**)

RN 167994-88-9 HCAPLUS
CN Bismuth lithium oxide (BiLi3O4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	4	17778-80-2
Bi	1	7440-69-9
Li	3	7439-93-2

L75 ANSWER 17 OF 21 HCAPLUS COPYRIGHT 2006 ACS on STN
AN **1994:546964** HCAPLUS
DN **121:146964**
TI Composition for semiconductive ceramic capacitor and its preparation
IN Ishiguro, Takero; Harada, Yoshiji
PA Jgc Corp, Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT **Patent**
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06077085	A	19940318	JP 1992-200023	19920727 <--
PRAI	JP 1992-200023		19920727 <--		

AB An oxide (A) of composition Li2O:Bi2O3 = 30-70:30-70 (mol. ratio) is allowed to be thermally diffused into a ceramic containing a main material of an oxide (B) from 100 mol Ti, 70-80 mol Sr, and 20-30 mol Ca; and additives (C) containing 0.1-0.4 mol Nb2O5, 0.015-0.05 mol Mn3O4, 0.1-0.3 mol CuO, 0.05-0.2 mol B2O3, and 0.5-2.0 mol SiO2 to give the title composition The preparation involves the following steps; (1) adding the additives C to a mixture from 100 mol Ti oxide, 70-80 mol Sr oxide or -carbonate, and 20-30 mol Ca oxide or -carbonate; (2) calcinating the powder mixture at 1,000-1,100°, pulverizing, forming, and sintering at 1,350-1,450° in H-containing reducing atmospheric; and (3) allowing A to be thermally diffused into the sintered product at 1,150-1,280°. The capacitor has high breakdown voltage and dielec. constant

IC ICM H01G0004-12
ICS C04B0035-46; H01B0003-12
CC 76-10 (Electric Phenomena)
IT **Electric capacitors**
(calcium strontium titanium oxide)
IT **157225-53-1**, Bismuth lithium oxide (Bi1.18Li0.82O2.18)
157270-14-9, Bismuth lithium oxide (Bi0.6-1.4Li0.6-1.4O1.6-2.4)
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(thermally diffusion of, in manufacture of calcium strontium titanium oxide semiconductive ceramic capacitors)
IT **157225-53-1**, Bismuth lithium oxide (Bi1.18Li0.82O2.18)

157270-14-9, Bismuth lithium oxide (Bi0.6-1.4Li0.6-1.4O1.6-2.4)
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(thermally diffusion of, in manufacture of calcium strontium titanium oxide semiconductive ceramic capacitors)

RN 157225-53-1 HCAPLUS
CN Bismuth lithium oxide (Bi1.18Li0.82O2.18) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	2.18	17778-80-2
Bi	1.18	7440-69-9
Li	0.82	7439-93-2

RN 157270-14-9 HCAPLUS
CN Bismuth lithium oxide (Bi0.6-1.4Li0.6-1.4O1.6-2.4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1.6 - 2.4	17778-80-2
Bi	0.6 - 1.4	7440-69-9
Li	0.6 - 1.4	7439-93-2

L75 ANSWER 18 OF 21 HCAPLUS COPYRIGHT 2006 ACS on STN
AN **1992:636390** HCAPLUS
DN **117:236390**
TI Bismuth-based solid **electrolyte** compositions and method for their preparation
IN Ilan, Riess
PA Dimotech Ltd., Israel
SO Israeli, 16 pp.
CODEN: ISXXAQ
DT **Patent**
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	IL 86159	A	19911121	IL 1988-86159	19880425 <--
PRAI	IL 1988-86159		19880425 <--		

AB The **electrolytes**, particularly suitable for O sensors, comprise ≥50% Bi2O3 and balance CeO2, In2O3, K2O, and/or Na2O. They possess high O ionic conductivity and an ionic transference number of ≥0.95. The oxides are mixed, then heated to melting (500-1400°), and annealed at 650-850°. Or the oxides are formed in situ from the carbonates, nitrates, or sulfates of the metals.
IC ICM **H01M0008-10**
CC 47-8 (Apparatus and Plant Equipment)
Section cross-reference(s): 59, 72, 79
ST bismuth solid **electrolyte**; oxygen sensor solid **electrolyte**
IT Sensors
(oxygen, solid-state, bismuth-based **electrolytes** for)
IT **Electrolytes**
(solid, bismuth-based, with high oxygen ion conductivity)
IT 7782-44-7, Oxygen, analysis
RL: ANT (Analyte); ANST (Analytical study)
(determination of, sensors for, bismuth-based **electrolytes** for)
IT 1304-76-3, Bismuth oxide (Bi2O3), uses 1306-38-3, Cerium oxide (CeO2),

uses 1312-43-2, Indium oxide (In2O3) 1313-59-3, Sodium oxide (Na2O), uses 12136-45-7, Potassium oxide (K2O), uses
RL: USES (Uses)
(**electrolytes** from, solid-state, with high oxygen ion conductivity)
IT 144611-41-6, Bismuth cerium oxide (Bi1-2Ce0-0.5O2.5-3) 144611-42-7, Bismuth cerium oxide (Bi1.4-2Ce0-0.6O3) **144611-43-8**, Bismuth potassium oxide (Bi1.7-2K0-0.3O2.7-3) **144611-44-9**, Bismuth sodium oxide (Bi1.7-2Na0-0.3O2.7-3)
RL: USES (Uses)
(**electrolytes**, solid-state, with high oxygen ion conductivity)
IT **144611-43-8**, Bismuth potassium oxide (Bi1.7-2K0-0.3O2.7-3)
144611-44-9, Bismuth sodium oxide (Bi1.7-2Na0-0.3O2.7-3)
RL: USES (Uses)
(**electrolytes**, solid-state, with high oxygen ion conductivity)
RN 144611-43-8 HCAPLUS
CN Bismuth potassium oxide (Bi1.7-2K0-0.3O2.7-3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	2.7 - 3	17778-80-2
Bi	1.7 - 2	7440-69-9
K	0 - 0.3	7440-09-7

RN 144611-44-9 HCAPLUS
CN Bismuth sodium oxide (Bi1.7-2Na0-0.3O2.7-3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	2.7 - 3	17778-80-2
Bi	1.7 - 2	7440-69-9
Na	0 - 0.3	7440-23-5

L75 ANSWER 19 OF 21 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1977:109112 HCAPLUS
DN 86:109112
TI Oxidizing activity of oxide-containing compounds in electrochemical cells with a solid iodide **electrolyte**
AU Yushina, L. D.; Kochergina, I. V.; Terekhov, V. I.; Kochergin, V. P.
CS Inst. Elektrokhim., Sverdlovsk, USSR
SO Izvestiya Vysshikh Uchebnykh Zavedenii, Khimiya i Khimicheskaya Tekhnologiya (**1976**), 19(11), 1738-41
CODEN: IVUKAR; ISSN: 0579-2991
DT Journal
LA Russian
AB Effects of various oxidizers (KClO3 [3811-04-9], KBrO3 [7758-01-2], CeO2, PrO2, etc.) of RbAg4I5 solid **electrolyte** on electromotive force, c.d., and capacity of Ag/RbAg4I5/**cathode batteries** were determined
The relations of the oxidizing activity of oxidizers to the solid **electrolyte** with the position of their central element in the periodic table of elements are discussed.
CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)
ST silver solid **electrolyte battery**
IT **Batteries, primary**
(silver, rubidium-silver iodide **electrolyte**-containing)
IT 1306-19-0, uses and miscellaneous 1306-38-3, uses and miscellaneous 1308-87-8 1309-37-1, uses and miscellaneous 1309-60-0 1310-53-8,

uses and miscellaneous 1312-81-8 1313-27-5, uses and miscellaneous 1313-96-8 1313-97-9 1314-06-3 1314-11-0, uses and miscellaneous 1314-13-2, uses and miscellaneous 1314-23-4, uses and miscellaneous 1314-35-8, uses and miscellaneous 1314-36-9, uses and miscellaneous 1314-60-9 1314-61-0 1314-62-1, uses and miscellaneous 1317-38-0, uses and miscellaneous 1333-82-0 3811-04-9 7601-54-9 7631-86-9, uses and miscellaneous 7631-99-4, uses and miscellaneous 7722-64-7 7758-01-2 7758-05-6 7789-00-6 7790-21-8 10466-65-6 12036-05-4 12055-23-1 12055-62-8 12060-08-1 12060-58-1 12061-16-4 12064-62-9 **12232-99-4** 13446-49-6 13463-67-7, uses and miscellaneous 13464-38-5 13472-45-2 13718-26-8 18282-10-5 20354-81-8 21908-53-2
RL: USES (Uses)
(**cathodes** containing, in **batteries** with rubidium-silver iodide **electrolyte** and silver **anode**, oxidizing activity of)

IT **12232-99-4**
RL: USES (Uses)
(**cathodes** containing, in **batteries** with rubidium-silver iodide **electrolyte** and silver **anode**, oxidizing activity of)

RN 12232-99-4 HCAPLUS
CN Bismuth sodium oxide (BiNaO3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3	17778-80-2
Bi	1	7440-69-9
Na	1	7440-23-5

L75 ANSWER 20 OF 21 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1976:113426 HCAPLUS
DN 84:113426
TI Secondary periodicity of the oxidative activity of oxides and oxygen-containing salts used in galvanic cells with a solid iodide **electrolyte**
AU Kochergina, I. V.; Drugova, G. M.; Yushina, L. D.; Kochergin, V. P.
CS Ural. Gos. Univ. im. Gor'kogo, Sverdlovsk, USSR
SO Izvestiya Vysshikh Uchebnykh Zavedenii, Khimiya i Khimicheskaya Tekhnologiya (**1975**), 18(11), 1738-40
CODEN: IVUKAR; ISSN: 0579-2991
DT Journal
LA Russian
AB Emfs. were determined for the cell Ag| RbAg4I5| **cathode** (Pt) in which mol. I [7553-56-2] occurred in the process of oxidation of I- [20461-54-5] in the RbAg4I5 [12267-44-6] **electrolyte** by O-containing compds. of groups II-VII elements of the periodic system. A secondary periodicity was observed in plots of electromotive force or $-\Delta H^{\circ}$ as a function of the radius of the central atom in these series. Secondary periodicity was not observed in the presence of similar compds. of elements in secondary groups. The O-containing compds. tested were NaNO3, Na3PO4, Na3AsO4, Sb2O5, Na3BiO4, KClO3, KBrO3, KIO3, SiO2, GeO2, SnO2, PbO2, ZnO, CdO, HgO, CrO3, MoO3, WO3, TiO2, ZrO2, KMnO4, KReO4, K2CrO4, K2MoO4, Na2WO4, Sc2O3, Y2O3, La2O3, V2O5, Nb2O5, and Ta2O5. The O-containing compds. were pressed in a layer between the RbAg4I5 and the Pt **cathode**.
CC 72-7 (Electrochemistry)
ST iodide oxidn oxide emf; **battery** primary solid **electrolyte**

IT Electric potential
(of silver-silver rubidium iodide solid-state **battery**)
IT **Batteries, primary**
(solid-state, oxidation of iodide in rubidium silver iodide **electrolyte** for)
IT 12267-44-6
RL: PRP (Properties)
(**electrolyte** for solid-state **batteries**, oxidation of iodide in)
IT 13446-49-6
RL: PRP (Properties)
(oxidation .by, of iodide, in rubidium silver iodide solid **electrolyte**)
IT 1313-27-5, reactions 1314-13-2, reactions 1314-23-4, reactions 1314-60-9 3811-04-9 7601-54-9 7631-99-4, reactions 7758-01-2 7758-05-6 10466-65-6 13463-67-7, reactions 13464-38-5 **37354-73-7**
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidation by, of iodide in rubidium silver iodide solid **electrolyte**)
IT 1306-19-0 1309-60-0 1310-53-8 1312-81-8 1313-96-8 1314-35-8 1314-36-9 1314-61-0 1314-62-1, reactions 1333-82-0 7631-86-9, reactions 7722-64-7 7789-00-6 12060-08-1 13472-45-2 18282-10-5 21908-53-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidation by, of iodide, in rubidium silver iodide solid **electrolyte**)
IT 20461-54-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidation of, electrochem., in rubidium silver iodide solid **electrolyte**)
IT **37354-73-7**
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidation by, of iodide in rubidium silver iodide solid **electrolyte**)
RN 37354-73-7 HCAPLUS
CN Bismuth sodium oxide (BiNa3O4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	4	17778-80-2
Bi	1	7440-69-9
Na	3	7440-23-5

L75 ANSWER 21 OF 21 HCAPLUS COPYRIGHT 2006 ACS on STN
AN **1958:14713** HCAPLUS
DN **52:14713**
OREF 52:2617c-f
TI Primary cells
IN Morehouse, Clarence K.; Glicksman, Richard
PA Radio Corp. of America
DT **Patent**
LA Unavailable
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2809225		19571008	US 1954-424579	19540421 <--

AB Inexpensive dry cells having long life, high w.-hr. capacity per unit

vol.and weight, and high flat operating voltage level for a wide range of current drains are made from Mg or Mg-base alloy **anodes**, **electrolytes**, and **cathodes** of Bi oxide and C. A suitable Mg alloy is Dow alloy AZ31A. The **anode** cup is lined with a separator of kraft paper, which may be coated with a gel-like material, e.g. carboxymethylcellulose, poly(vinyl alc.), or a starch-flour gel, and the **cathode** is deposited within the lined **anode** cup. Bi compds. having an oxidation number of 3 or more, e.g. Bi_2O_3, Bi_2O_4, Bi_2O_5, BiOCl, BiOBr, BiOI, $Bi(IO_3)_3$, $\chi Bi_2O_3.yN_2O_5 2H_2O$, $Bi_2(MoO_4)_3$, or $NaBiO_3$, are suitable for the **cathodes**. Ten parts of Bi oxide plus 1 part of graphite can be used. Ionically conductive **electrolytes**, chemically compatible with the **anode** and **cathode**, include halides of alkaline and alkaline earth metals, preferably MgBr. Chromates or bichromates may be included as corrosion inhibitors. An **electrolyte** of MgBr 250 and $Na_2Cr_2O_7$ 0.2 g./l. of water is satisfactory with AZ31A alloy. This cell maintains a high voltage level longer than LeClanche or Mg-MnO_2 cells. In the latter 2 cells, the closed circuit voltage dropped to 0.6 v. in 65 min. while, in the new cell, it stays above 0.6 v. for 140 min. when discharged continuously through a 4-ohm resistance. With 50 ohms, the com. cells drop to 0.9 v. in <30 hrs., while the new cell maintains its voltage for 60 hrs.

CC 4 (Electrochemistry)

IT **Voltaic Cells**
(dry, with Mg or Mg-alloy **anodes** and Bi oxide **cathode**
)

IT **Anodes** and(or) Positive **electrodes**
(magnesium or Mg alloy, voltaic cell with)

IT **Cathodes and(or) Negative electrodes**
(oxygen-containing Bi compds., dry cell with)

IT Bismuth bromide, BiOBr
(dry cell **cathodes** from)

IT Bismuth iodide, BiOI
Bismuth molybdate(VI), $Bi_2(MoO_4)_3$
(dry-cell **cathodes** from)

IT 7439-95-4, Magnesium
(alloys, **anodes**, voltaic cells with)

IT 7439-95-4, Magnesium
(**anodes**)

IT 10588-01-9, Sodium dichromate
(as corrosion inhibitor, in $MgBr_2$ dry-cell **electrolyte**)

IT 1304-76-3, Bismuth oxide
(**cathodes** from, for dry cells)

IT 7440-69-9, Bismuth
(compds., dry cell **cathodes** from $xBi_2O_3.yN_2O_5$)

IT 7787-59-9, Bismuth chloride, BiOCl **12232-99-4**, Sodium bismuthate(V), $NaBiO_3$
(dry cell **cathodes** from)

IT 7789-48-2, Magnesium bromide, $MgBr_2$
(dry cell **electrolyte** from Na dichromate and)

IT 13702-39-1, Bismuth iodate, $Bi(IO_3)_3$
(dry-cell **cathodes** from)

IT **12232-99-4**, Sodium bismuthate(V), $NaBiO_3$
(dry cell **cathodes** from)

RN 12232-99-4 HCAPLUS

CN Bismuth sodium oxide ($BiNaO_3$) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3	17778-80-2

Bi	1	7440-69-9
Na	1	7440-23-5

=> fil reg
FILE 'REGISTRY' ENTERED AT 13:07:01 ON 19 DEC 2006
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 18 DEC 2006 HIGHEST RN 915867-78-6
DICTIONARY FILE UPDATES: 18 DEC 2006 HIGHEST RN 915867-78-6

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH June 30, 2006

Please note that search-term pricing does apply when conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

=> => s l43 not l76
L77 64 L43 NOT L76

=> d scan

L77 64 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN **Bismuth cesium oxide (BiCsO2) (9CI)**
MF **Bi . Cs . O**
CI TIS

Component	Ratio
O	2
Bi	1
Cs	1

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):20

L77 64 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN **Bismuth sodium oxide (Bi1.8Na0.2O3) (9CI)**
MF **Bi . Na . O**
CI TIS

Component	Ratio
O	3
Bi	1.8
Na	0.2

FYI -
"free" view of
sample hit
structures.

L77 64 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN **Bismuth cesium oxide (Bi4Cs2O7) (9CI)**
MF **Bi . Cs . O**
CI TIS

Component	Ratio
O	7
Bi	4
Cs	2

L77 64 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN **Bismuth cesium oxide (Bi4Cs6O9) (9CI)**
MF **Bi . Cs . O**
CI TIS

Component	Ratio
O	9
Bi	4
Cs	6

L77 64 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN **Bismuth lithium oxide (Bi4LiO7) (9CI)**
MF **Bi . Li . O**
CI TIS

Component	Ratio
O	7
Bi	4
Li	1

L77 64 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN **Bismuth potassium oxide (Bi1.15K0.85O3) (9CI)**
MF **Bi . K . O**
CI TIS

Component	Ratio
O	3
Bi	1.15
K	0.85

L77 64 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN **Bismuth potassium oxide (BiK0.98O3.03) (9CI)**
MF **Bi . K . O**
CI TIS

Component	Ratio
O	3.03
Bi	1
K	0.98

L77 64 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN **Bismuth lithium sodium oxide (Bi1.4Li0.2Na0.4O2.4) (9CI)**
MF **Bi . Li . Na . O**
CI TIS

Component	Ratio
O	2.4
Bi	1.4
Na	0.4
Li	0.2

L77 64 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN **Bismuth potassium oxide (Bi1-1.1K0.9-1O3) (9CI)**
MF **Bi . K . O**
CI TIS

Component	Ratio
O	3
Bi	1 - 1.1
K	0.9 - 1

L77 64 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN **Bismuth potassium oxide (Bi1.8K0.2O2.8) (9CI)**
MF **Bi . K . O**
CI TIS

Component	Ratio
O	2.8
Bi	1.8
K	0.2

L77 64 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN **Bismuth cesium oxide (Bi2Cs4O7) (9CI)**
MF **Bi . Cs . O**
CI TIS

Component	Ratio
O	7
Bi	2
Cs	4

L77 64 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN **Bismuth rubidium oxide (BiRb3O4) (9CI)**
MF **Bi . O . Rb**
CI TIS

Component	Ratio
O	4
Bi	1

Rb	3

L77 64 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN **Bismuth potassium oxide (BiK3O4) (9CI)**
MF **Bi . K . O**
CI TIS

Component	Ratio
O	4
Bi	1
K	3

L77 64 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN **Bismuth sodium oxide (Bi2Na4O7) (9CI)**
MF **Bi . Na . O**
CI TIS

Component	Ratio
O	7
Bi	2
Na	4

L77 64 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN **Bismuth rubidium oxide (BiRb3O3) (9CI)**
MF **Bi . O . Rb**
CI TIS

Component	Ratio
O	3
Bi	1
Rb	3

L77 64 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN **Bismuth cesium oxide (BiCs3O3) (9CI)**
MF **Bi . Cs . O**
CI TIS

Component	Ratio
O	3
Bi	1
Cs	3

L77 64 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN **Bismuth potassium oxide (Bi1.83K0.17O2.83) (9CI)**
MF **Bi . K . O**
CI TIS

Component	Ratio
O	2.83
Bi	1.83

K | 0.17

L77 64 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN **Bismuth lithium rubidium oxide (BiLi6RbO6) (9CI)**
MF **Bi . Li . O . Rb**
CI TIS

Component	Ratio
O	6
Bi	1
Rb	1
Li	6

L77 64 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN **Bismuth rubidium oxide (9CI)**
MF **Bi . O . Rb**
CI TIS

Component	Ratio
O	x
Bi	x
Rb	x

L77 64 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN **Bismuth potassium oxide (Bi2.12K1.06O5.35) (9CI)**
MF **Bi . K . O**
CI COM, TIS

Component	Ratio
O	5.35
Bi	2.12
K	1.06

L77 64 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN **Bismuth rubidium oxide (Bi12Rb2O37) (9CI)**
MF **Bi . O . Rb**
CI TIS

Component	Ratio
O	37
Bi	12
Rb	2

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):end

=>